



Gross National Income Inventory ESA 2010

Estonia

2025

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Chapter 1. Overview of the system of accounts

1.1. Introduction

The GNI Inventory is prepared for reference year 2021. The subchapters describing the organisational setup of Statistics Estonia (SE) reflect the status as of October 2025.

1.1.1. Main approaches used

Statistics Estonia compiles national accounts according to the concepts, definitions, classifications and accounting rules of the European System of Accounts (ESA 2010). Gross domestic product (GDP) is compiled by three different approaches:

- production approach;
- expenditure approach;
- income approach.

In GDP compilation, the production approach is considered to be the most reliable method, because more detailed information is available for this approach, and there are more possibilities to verify the estimates against alternative data sources. The expenditure approach is an independent approach as the various expenditure components are estimated.

The reconciliation between production, expenditure and income based estimates of GDP is performed in the supply and use tables (SUT) at the detailed product level. Both the supply and use side aggregates are revised in the balancing process, but the demand side is mostly affected when balancing. Changes in inventories are sometimes adjusted in the balancing process, but stocks are not treated as a residual item. The GDP by income approach is not an independent approach, as operating surplus and mixed income are derived residually when balancing the supply and use tables.

The final estimates of GDP by production, expenditure and income approaches are based on the supply and use tables, which were integrated into the annual national accounts compilation process in 2006. Starting from the accounting year 2000, Statistics Estonia produces the supply and use tables at current and constant prices regularly on an annual basis, which provides an important check on the quality of the national accounts estimates. The supply and use tables provide a framework for compiling consistent and reliable GDP data by production, expenditure and income approaches.

The economic territory of the Republic of Estonia includes the land mass within the borders of the country, offshore islands and Estonia's territorial enclaves situated in the rest of the world (embassies, consulates, scientific bases, etc.), Estonia's national air-space and territorial waters, and vessels, aircraft and other mobile equipment when the operator is domiciled in Estonia. Foreign countries' embassies and consulates situated in Estonia as well as supranational and international organisations are counted as foreign territory.

1.1.2. Organisation and responsibilities in the NSI

Statistics Estonia is a government agency in the area of administration of the Ministry of Finance. The main task of Statistics Estonia is to provide public institutions, business and research circles, international organisations and individuals with reliable and objective information on the economic, demographic, social and environmental situation and trends in

Estonia. Official statistics are in compliance with international classifications and methods and in accordance with the principles of impartiality, reliability, relevancy, cost efficiency, confidentiality and transparency.

In producing statistics, Statistics Estonia is guided by the Official Statistics Act that came into force in July 1997 and was last amended in 2022¹. It defines the contents of official statistics, the principles and quality criteria of producing official statistics, the role of Statistics Estonia in the preparation of the official statistical programme, implementation of the statistical methods used in conducting surveys, and respondents and their obligations and liabilities. It also includes regulations on data collection, statistical processing, storage and dissemination of data. The work of the institution is based on the values of reliability, co-operation and innovation.

For providing information, SE performs statistical actions, the results of which are published in the Statistical Database. The volume of statistics that is published electronically has increased year by year. Statistical data that are of interest to the public are outlined in news releases. Information on published statistics is available in the release calendar.

Statistics Estonia can trace its origins back to the establishment of the State Statistical Central Bureau of the Republic of Estonia in 1921. However, SE can be considered to be a relatively “young” national statistical institute, as most of its modern development only dates from the time after the restoration of independence in the early 1990s. SE makes effective use of modern IT tools, promotes electronic data collection and, in accordance with the statistical legislation, makes maximum use of administrative data for statistical purposes.

There are seven departments reporting to the Director General (DG) and to two Deputy Directors General (see Chart 1.1 for the organisational structure of SE). One Deputy DG, with a focus on data collection and processing, is responsible for the Economic and Environmental Statistics Department, Macroeconomic Statistics Department, Population and Social Statistics Department, Interviewers Network Department and Data Acquisition and Processing Department. The second Deputy DG is responsible for Data Governance and Data Science. Three departments currently report directly to the DG: Marketing and Dissemination Department, Personnel and Support Services Department and Development Department.

The Statistical Council is an advisory body for Statistics Estonia in the production of official statistics. The Council was established in 2010 and consists of the representatives of Statistics Estonia, Eesti Pank and the Data Protection Inspectorate as well as the representatives of users and respondents. The objective of the Statistical Council is to ensure, by giving advice and delivering opinions, the functioning of the official statistical system. The membership and rules of procedure of the Council are published on SE’s website.

Compilers of national accounts statistics

There are 27 employees working in the Macroeconomic Statistics Department. The department, which consists of two teams, is led by the Head of Department. Each team is dedicated to a defined statistical domain and is led by a team lead. The National Accounts Team comprises 13 employees who are engaged in and contributing to the compilation of national accounts statistics. The Government Finance Statistics Team comprises 9 employees, with 4 of them

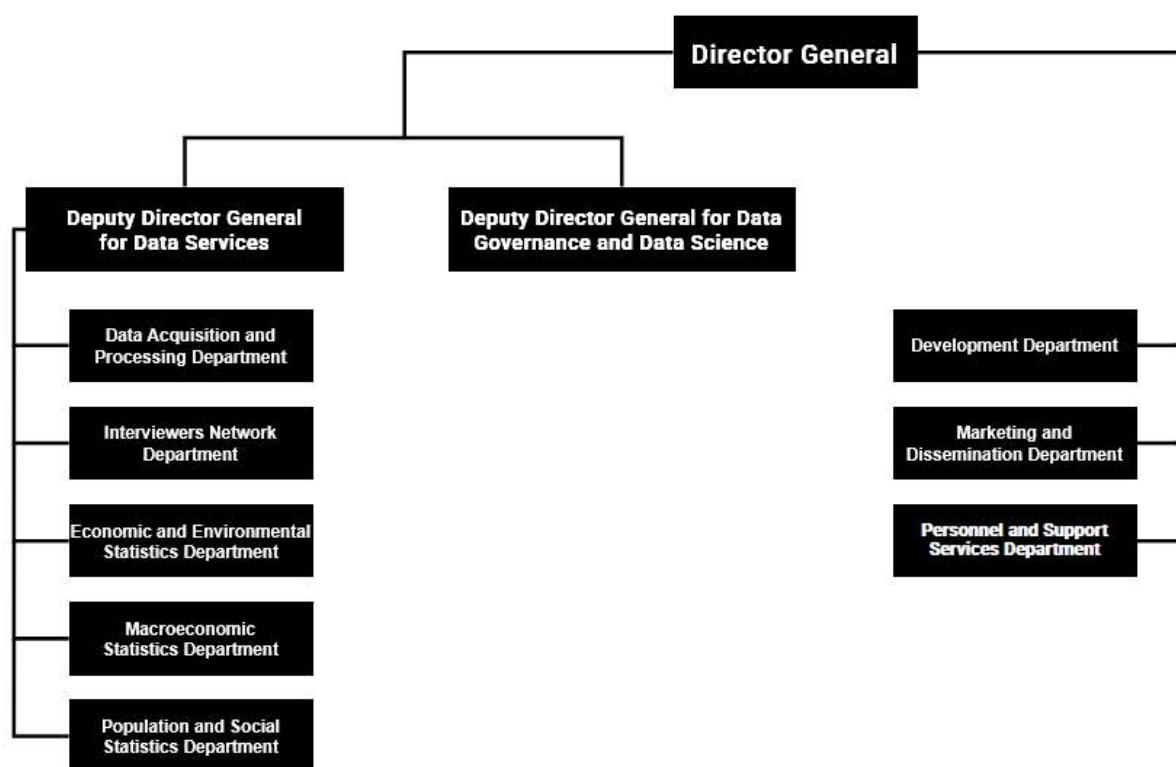
¹ The Official Statistics Act can be found at <https://www.riigiteataja.ee/en/eli/ee/Riigikogu/act/522032022003/consolidek>

contributing directly to national accounts. There are 5 employees in the department who provide support services to both teams.

Within National Accounts team, short-term national accounts experts are responsible for quarterly and provisional annual estimates of GDP, and the team members are responsible for the calculation of all GDP components, which can be used for other datasets as well; sectoral accounts is one example. The sectoral accounts experts are responsible for non-financial institutional sector accounts, and regional and annual financial accounts.

The annual national accounts experts are responsible for final GDP estimates at current and constant prices derived from the supply and use tables, for the compilation of the symmetric input-output table, for GNI-based EU own resources reporting, for the calculation of the weighted average rate of value added tax for a statement of the VAT resources base. The government finance statistics experts are responsible for the excessive deficit procedure statistics, and quarterly and annual general government financial and non-financial accounts.

Chart 1.1 Structure of Statistics Estonia



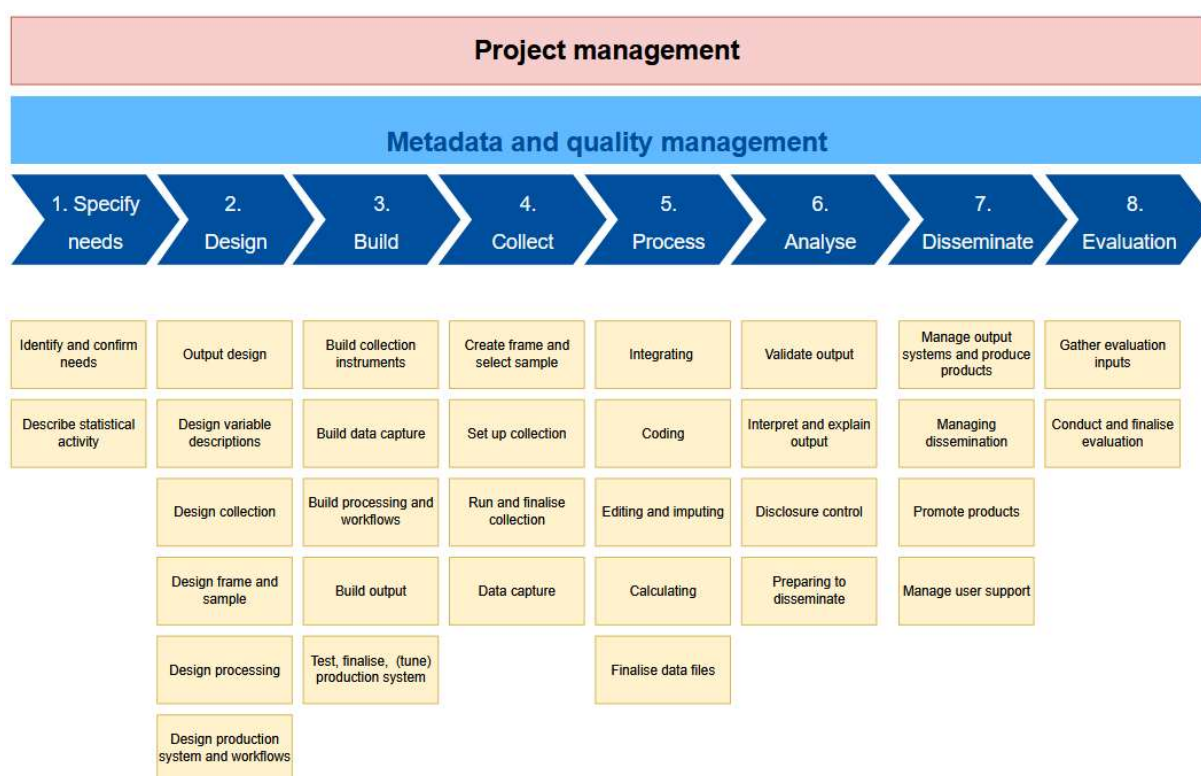
The main partners for national accounts compilers are the teams responsible for enterprise and agricultural statistics as providers of primary data for non-financial enterprises, some segments of financial enterprises, and non-profit institutions. These teams are responsible for structural business statistics and international trade in goods statistics (ITGS) used in national accounts. For the agriculture sector, the Economic Accounts for Agriculture (EAA) with detailed data on output, intermediate consumption and value added components are also prepared by these teams.

1.1.3. Quality management

Statistics Estonia has been established for the production of official statistics. Official statistics are public information that comply with specific principles and quality criteria. These have been agreed by the United Nations Economic Commission for Europe and in the Treaty on European Union (Article 338). The principles and criteria are defined in detail in the European Statistics Code of Practice (CoP). Compliance with the CoP is assessed by independent experts. Estonia underwent a peer review in 2006, 2015 and 2021. The latest peer review noted SE as compliant with international requirements.

SE gives the highest priority to adopting relevant European and other international statistical policies, standards, classifications and methodologies. A notable example of this is the adoption of the Generic Statistical Business Process Model (GSBPM) as the underlying architecture for the management and development of its statistical products and processes. The production of national accounts statistics is organised following this model.

Chart 1.2 GSBPM implemented in SE



The mission of SE is to provide reliable and objective information about Estonia. In this way, SE supports democratic decision-making based on facts as well as scientific research by producing reliable statistics describing the society. SE's vision statement underlines that official statistics are "the primary source of reliable information".

Reliability means that the official statistics produced by SE reflect the real situation as accurately, truthfully and consistently as possible and that the data sources and statistics production methods are chosen on the basis of scientific criteria.

Objectivity means that the statistics are produced in a systematic and impartial manner, which requires adherence to professional and ethics standards and the transparency of all activities for users and respondents.

A high-level agreement on exchange of primary data and cooperation on the development of statistical methodologies has been signed with Eesti Pank (the central bank of Estonia), the producer of official statistics on monetary and balance of payment statistics. Additionally, there is a high-level agreement on exchange of primary data with the State Shared Service Centre, who provides various support services to the central government agencies. Also, agreements on data extraction have been concluded with selected registers and other providers of administrative data.

Within SE, there are no officially signed service level agreements between the national accounts units and all the units supplying basic data to the national accounts units. The exchange of necessary data is realised through job orders, which are coordinated and approved electronically by data suppliers and national accounts units once a year, usually before the beginning of the new calendar year. Special software JIRA is used for managing and monitoring the job orders.

For each compilation round, the basic data used for national accounts estimates are checked and verified by the experts responsible for the component. Validation meetings are held, and the owner of the underlying basic data is also a member of the validation team. For finalisation of the data release, the validation of the compiled national accounts estimates is completed by the final validation team consisting of a responsible leading analyst, National Accounts Team Lead and the Head of the Macroeconomic Statistics Department. The national press release is coordinated by the Marketing and Dissemination Department.

There are no other bodies or other statistics officials involved in the validation and supervision of the national accounts statistics at the moment.

1.2. Revision policy and timetable for revising and finalising the estimates; major revisions since the last version of the GNI Inventory

The national accounts figures for the reference period are published several times. Regular revisions depend on the availability of data sources. The timetable for revising the annual accounts is shown in **Error! Reference source not found.** below.

The first annual GDP estimates based on quarterly data are currently published 2 months after the end of the year, simultaneously with the publication of data on the fourth quarter of the previous year. The second release of GDP estimates takes place 8 months after the end of the year, when also the regular annual revision of the last three years is published. The semi-final GDP estimates are published 20 months after the reference period, based on the annual reports of enterprises and public institutions. The final GDP data are derived from the supply and use tables 36 months after the reference period. From 2022, the revisions following the second provisional GDP estimate take place 2 weeks earlier than noted in the following table.

Table 1.1 Current publication cycle

Annual accounts	Number of days/months after the end of the reference year
First provisional GDP estimates based on quarterly data	T + 2 months
Second provisional GDP estimates based on quarterly and detailed data for the previous year	T + 8 months
Semi-final GDP estimates based on annual data	T + 20 months
Final GDP estimates derived from SUT	T + 36 months

In 2015, Statistics Estonia and Eesti Pank harmonised and implemented the principles for revising official statistics in the domains of external sector statistics and the sub-accounts of national accounts (GDP, government finance statistics, quarterly and annual non-financial and financial accounts). The new harmonised revision policy is in line with the principles of the revision policy recommended by the European Commission and the European Central Bank².

Since the last version of the GNI Inventory from 2021, several revisions of national accounts data have been carried out by SE. Information on the revisions is available on SE's website in the section "National Accounts"³.

These revisions are outlined in Table 1.2 below.

Table 1.2 Revisions carried out by SE

Year	Main changes	Period
2022, 2023, 2025	- Supply and use tables at T-4 years - Enterprise's complex calendar year report (EKOMAR) at T-2 years - Updates to other data sources (i.e. Balance of Payments, balance sheets etc.)	T-4 years
2024	- Adoption of the new COICOP classification - Reclassification of some units to different institutional sectors - Changes in the dwelling stock methodology - Adjustment of renewable energy charges - Improvement of quarterly distribution of consumption of fixed capital	From 1995 onwards

1.3. Outline of the production approach

The production approach is the main method for compiling GDP in Estonia. The estimates of GDP at basic prices are made by economic activities broken down by institutional sectors and by type of producers. GDP at market prices is derived from GDP at basic prices by adding taxes on products and subtracting subsidies on products (see Table 1.3). The final estimates of GDP by production approach are derived from the balanced supply and use tables. More details on the production approach method can be found in 0.

² ESS guidelines on revision policy for Principal European Economic Indicators (PEEIs). Latest publication: <http://ec.europa.eu/eurostat/en/web/products-manuals-and-guidelines/-/KS-RA-13-016>

³ Publications on revision of national accounts data: <https://www.stat.ee/en/gdp-revisions>

Table 1.3 GDP by production approach, 2021
(million euros)

Components	Value	% of GDP
Output at basic prices	62,643.7	199.2
Intermediate consumption at purchasers' prices (–)	35,124.8	111.7
Gross value added at basic prices	27,518.9	87.5
Taxes on products	4,061.3	12.9
Subsidies on products (–)	-126.8	0.4
GDP at market prices	31,453.3	100.0

1.3.1. Reference framework

Register data

For the production of economic statistics, the Business Register for Statistical Purposes is used. The Estonian Statistical Business Register (SBR) was established in 1994. In the creation of the register, the requirements of EU legislation, especially those of the Business Register Regulation No 177/2008 were taken into account. The SBR includes all economic units that operate in Estonia: enterprises, sole proprietors, non-profit associations, foundations, central and local government institutions, except households and the embassies of foreign countries.

The SBR includes the following statistical units: legal unit, enterprise, local unit, kind-of-activity unit and local kind-of-activity unit. In the vast majority of cases, one enterprise equals one legal unit, except for cases where one enterprise equals several legal units. There are no administrative sources for the data of local units in Estonia. Data on local kind-of-activity units are collected by a special survey, which is part of the annual Structural Business Statistics Survey and is used for compiling the statistical units “Local Unit” and “Kind-of-Activity Unit”.

The SBR includes different sets of information on different statistical units. The common data for all units include the identification number and contact information. For legal units, a unique identification number is used, which is received from legal registers. This unique number is also used by all legal units in all official proceedings in Estonia. In addition, all statistical units in the statistical register have their own unique internal identification code. The variables of the units include (in addition to the ID number and contact data): principal and secondary activity, number of persons employed and number of employees, turnover, form of ownership and legal form, institutional sector code, dates of registration and liquidation etc.

All statistical units are classified by:

- 1) economic activity (the Estonian Classification of Economic Activities (EMTAK) is used at the 5-digit level, which is consistent with the 4-digit level of NACE Rev. 2);
- 2) legal form;
- 3) form of ownership (a classification of its own was developed by Statistics Estonia (SE) in 1996 in order to enable the identification of foreign-, state- or privately owned units);
- 4) institutional sector code;
- 5) geographical location (the Classification of Administrative and Settlement Units of Estonia is used; in addition, the European classification NUTS has been implemented).

All sectors of the economy, including the agricultural sector, are covered. For keeping records on agricultural households, the Statistical Register of Agricultural Holdings was created in 2002. The main sources for this register are the Estonian Agricultural Registers and Information Board and the Estonian Agricultural Board.

Enterprise groups were included in the SBR in 2005. Until 2013, the register contained information on two types of enterprise groups: foreign-controlled enterprise groups (with a group head located outside Estonia) and all-resident enterprise groups. Since 2013, the statistical register also includes information on Estonian multinational groups (domestically controlled groups with at least one foreign subsidiary). The main sources for the register of groups are the database on ownership relations between legal units and the data from annual reports, which are both managed by the Business Register and also by the EuroGroups Register (EGR). All resident legal units and foreign units that have relations with Estonian units have LEID numbers if these are matched with the EGR.

Data on legal units are updated based on the following administrative registers: the Business Register, the Non-Profit Associations and Foundations Register and the State Register of State and Local Government Agencies. Once a month, SE receives the data changes in these registers and information on new registered units. The number of employees, net turnover and data on legal units that have cross-border transactions are also received monthly from the Tax and Customs Board. Statistical surveys and databases of professional associations are also used as a source for updating the register data.

The Statistical Profile (SP) is a frozen frame of active units produced on the basis of SBR data and used as a basis for the production of all economic statistics and also a part of agricultural and social statistics. The SP is compiled by 1 November every year and is used for the production of Structural Business Statistics (SBS) of the same year and short-term statistics of the following year. All economically active units and all units active during at least a part of the reference period are included in the SP.

For the production of economic statistics on financial corporations, the SBR is used as a reference framework. It includes all units engaged in financial intermediation, including monetary financial institutions, other financial intermediaries, financial auxiliaries, investment funds, insurance corporations and pension funds registered in Estonia. Data on units belonging to the financial sector are updated in close cooperation with Eesti Pank.

Concerning units of the general government, the SBR is based on the State Register of State and Local Government Agencies, which is maintained by the Ministry of Finance and includes information on state and local government institutions. In addition, data on general government units from Public Sector Financial Statements (PSFS) are used for updating the SBR. The same lists of government sector and sub-sector units are used in the information system of Public Sector Financial Statements and for the compilation of government finance statistics according to the European System of Accounts (ESA).

Delimitation of institutional sectors

SE follows the institutional sector approach in the data compilation according to the production and income approach. Five institutional sectors are distinguished: non-financial corporations (S.11), financial corporations (S.12), general government (S.13), households (S.14) and NPISH (S.15). Each sector is broken down into activities or into activities and sub-sectors.

The non-financial corporations sector includes national and foreign-controlled private corporations, public companies, branches of foreign companies, non-profit institutions engaged in the market production of educational and other services, business and employers' organisations serving non-financial corporations. The following units are excluded from the

S.11 population: non-market producers; for example, state and local government-owned companies providing services under hospital activities (NACE class 861) or residential nursing care activities (NACE 871) as well as companies renting and operating state real estate (NACE 682), and other such companies that provide services for the state, are mainly financed and controlled by the government and are, therefore, classified as units of the general government sector.

Under ESA 2010 revision, the delimitation of foundations and enterprises is made on the basis of the market/non-market test for public sector units. Some companies are classified from the S.11 sector into S.13, because they provide services only to the government sector or are created in order to govern some specific assets and mostly receive income from the government sector. The financial corporations sector is divided into 3 activities and 9 sub-sectors: central bank (S.121), deposit-taking corporations except the central bank (S.122), money market funds⁴ (MMF) (S.123), non-MMF investment funds (S.124), other financial intermediaries except insurance corporations and pension funds (S.125), financial auxiliaries (S.126), captive financial institutions and money lenders (S.127), insurance corporations (S.128) and pension funds (S.129).

The classification of holding companies and head offices is consistent with ESA 2010. Head offices classified in NACE Rev. 2 under Class 701 of Section M are allocated to sector S.11.

The general government sector covers all institutional units considered as government non-market producer units. In Estonia, the general government sector is divided into 14 activities (13 activities starting until 2013) and three sub-sectors: central government (S.1311), local government (S.1313) and social security funds (S.1314).

In national accounts, the households sector covers both market producers and producers for own final use. Unincorporated enterprises (i.e. sole proprietors) owned by households, which is one of the legal forms of business activity in Estonia, are considered as market producers in national accounts. Producer units that are not obliged to register because they have no market output (type N3 of non-exhaustiveness) are treated as other non-market household producers for own final use. The following activities for own final use are defined: production, storage and processing of agricultural products by households (part of activity H.A.01), production of fuel wood (activity O.A.02), fishing (O.A.03), own-account construction and major repair of dwelling (O.F.41), housing services produced by owner-occupiers (O.L.68202) and activities of households as employers of domestic personnel (O.T.97_98).

In Estonia, NPIs are classified into different institutional sectors. A part of non-profit institutions that provide educational and other services with a large share of market output are classified into the non-financial corporations sector using the 50% criterion. Business and employers' organisations, except agricultural associations, are distinguished from NPISH and included in the non-financial corporations sector (activity M.S.94). Agricultural associations and unions that serve farmers are reclassified into the households sector (activity H.S.94). NPIs are classified into the financial corporations sector if they serve financial corporations or are principally engaged in financial intermediation and/or in auxiliary financial activities. The units that are managed, controlled and funded by the government, received more than 50% of financing for operating expenditures from the government in two consecutive years and fulfil

⁴ Do not exist in Estonia.

functions of the government are classified into the general government sector. Most of the non-profit institutions are non-market producers classified to the NPISH sector.

1.3.2. Valuation

Market output is valued at basic prices in accordance with the ESA 2010 definition. The total output of a non-market producer (GG and NPISH) is valued at total production cost. Output for the central bank (S.121) is calculated as the sum of costs, i.e. its intermediate consumption, compensation of employees, consumption of fixed capital and other taxes less subsidies on production. Output for own final use is valued at production cost plus a mark-up for net operating surplus or mixed income (except for non-market producers).

The valuation of intermediate consumption is in accordance with the accrual principles of ESA 2010. Products used for intermediate consumption are recorded and valued at the time they enter the production process.

1.3.3. Main data sources

The production measure of GDP is mainly based on the data of combined data surveys (80% of GDP in 2021) and administrative sources (13%).

The initial estimates of output and intermediate consumption are made separately for each institutional sector by activities and products. Next, the data are integrated into a SUT database for balancing.

The main sources for data on the non-financial corporations sector include the annual statistical surveys on the economic indicators of agricultural, forestry and fishing enterprises and the Structural Business Statistics that provide comprehensive information for the calculation of output, intermediate consumption, value added and its components.

The survey on the economic indicators of agricultural, forestry and fishing enterprises covers enterprises engaged in agriculture, forestry and fishing activities (NACE Rev. 2 Section A). The SBS Survey covers all activities in the NACE Rev. 2 Sections B to S with the exception of financial and insurance services (Section K), public administration and defence; compulsory social security (Section O) and activities of membership organisations (Division 94). Besides the activities that are obligatory based on the SBS regulation, the survey also covers education (Section P), human health and social work activities (Section Q), arts, entertainment and recreation (Section R) and other personal service activities (Divisions 95 and 96).

For the financial corporations sector, both statistical and administrative sources are used:

- Financial statement of Eesti Pank, which provides detailed information about the activity of the central bank (S.121).
- Data on deposit-taking corporations (sub-sector S.122), leasing companies (part of the sub-sector S.125) and pension funds (sub-sector S.129) are derived from Eesti Pank.
- Statistical surveys include all other financial enterprises that are not covered by administrative sources: non-MMF investment funds (sub-sector S.124), other financial intermediaries (sub-sector S.125), financial auxiliaries (sub-sector S.126), captive financial institutions and money lenders (sub-sector S.127) and insurance corporations (sub-sector S.128).

The estimation of general government output is based on the detailed data from the Ministry of Finance's information system of Public Sector Financial Statements. General government units are totally covered. For the general government sector, monthly reports on public sector financial statements are used.

Different sources are used to estimate the output, intermediate consumption and the components of value added of the households sector. For households as market producers, data are obtained from the tax declarations on business income of sole proprietors from the Tax and Customs Board. For agricultural household plots, data are derived from EAA. Estimates for imputed rents of owner-occupied dwelling services are based on information obtained from the 2021 Population and Housing Census.

The two most important data sources for NPISH are the annual survey of non-profit institutions conducted by SE and social tax data from the Tax and Customs Board. Information received by survey is grossed up using administrative data to ensure complete coverage of non-profit institution units.

For taxes on products, administrative sources from the Ministry of Finance and the Tax and Customs Board are used.

For subsidies on products, the main data sources include:

- 1) accrual-based PSFS;
- 2) annual reports of the Estonian Agricultural Registers and Information Board;
- 3) data from institutions responsible for implementing different programmes (Enterprise Estonia, Environmental Investments Centre, Estonian Film Foundation).

1.3.4. Transition from private accounting and administrative concepts to ESA 2010 national accounts concepts

In order to estimate the value of output and intermediate consumption according to the requirements of ESA 2010, Statistics Estonia makes a number of adjustments to business statistics and administrative sources for differences in concepts, valuation, recording treatment and exhaustiveness. In output, these adjustments concern subsidies on products, trade margins on goods for resale, commission charges or fees on purchases made on behalf of third parties, elimination of holding gains from stocks, net recording for lotteries and gambling, own-account produced software, entertainment, literary and artistic originals, R&D and tangible fixed assets, and adjustments for validation and exhaustiveness. In intermediate consumption, adjustments concern insurance service charges, capitalised durables, value of rents on land, payments for rental of machinery and transport equipment, income in kind, R&D services acquired, business travel expenses and allocation of FISIM.

1.3.5. Roles of direct and indirect estimation methods, benchmarks and extrapolations

At present, direct estimation methods dominate in the production approach. Indirect methods are used for the calculations of own-account production by households. Estimates for production of fuel wood and fishing for own final use and own-account construction and capital repair of dwellings by households are produced by national accounts experts based on the Household Budget Survey and other sources.

Benchmarks or extrapolations are used in the case of housing services produced by owner-occupiers and in the compilation process of the supply and use tables. Estimates for imputed

rents of owner-occupied dwelling services are based on Population and Housing Census data for the year 2021 used as benchmarks.

The compilation of the SUT requires a lot of data, especially specific information on products, on a regular basis. The SBS survey provides detailed data on the cost structure (i.e. raw materials, supplies, fuels and business services) on a multi-annual basis; therefore, extrapolation techniques are used for intermediate years, using the years for which cost detail is available as benchmark years.

1.3.6. Main approaches taken with respect to exhaustiveness

In national accounts, the following types of non-exhaustiveness are considered the most important and are currently included in GDP estimates: the adjustments for non-registered underground economy (non-exhaustiveness type N1), illegal activities (type N2), producers not obliged to register (type N3), misreporting (type N6) and other GDP undercoverage (type N7). Non-exhaustiveness adjustments to GDP estimates by production approach concern all institutional sectors.

In 2021, exhaustiveness adjustments represented 4.6% of the GDP by production approach (see Table 1.4). Explicit exhaustiveness adjustments concern all institutional sectors. The largest adjustments were made in the manufacturing, (0.7% of GDP), construction (0.7% of GDP) and trade (0.7% of GDP) sectors.

Table 1.4 Exhaustiveness adjustments by NACE Section, 2021
(million euros)

NACE Section	Type of non-exhaustiveness					Total	As % of GDP	As % of initial value added
	Non- registered economy	Illegal activities	Producers not required to register	Mis- reporting	Other under- coverage			
	N1	N2	N3	N6	N7			
A	26.7	0.0	9.3	0.5	5.5	42.0	0.1	6.9
B	0.0	0.0	0.0	0.6	6.7	7.3	0.0	4.9
C	63.2	5.6	0.0	30.4	122.5	221.7	0.7	5.4
D	0.0	0.0	0.0	1.3	28.9	30.2	0.1	3.4
E	0.1	0.0	0.0	0.8	4.1	5.0	0.0	2.2
F	68.8	0.0	82.1	45.2	22.0	218.0	0.7	12.0
G	24.3	76.7	0.0	69.6	51.2	221.8	0.7	6.4
H	12.8	0.0	0.0	11.7	44.9	69.3	0.2	3.9
I	4.9	0.0	0.0	8.8	21.7	35.4	0.1	10.2
J	3.1	0.0	0.0	45.0	200.9	249.1	0.8	13.2
K	0.0	0.0	0.0	0.0	70.8	70.8	0.2	5.6
L	18.7	0.0	0.0	19.1	4.8	42.7	0.1	1.3
Imputed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
M	7.1	0.0	0.0	53.6	48.7	109.3	0.3	6.2
N	7.5	0.0	0.0	27.7	23.0	58.2	0.2	6.1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P	1.3	0.0	0.0	3.0	2.5	6.8	0.0	0.5
Q	2.1	0.0	0.0	7.7	4.0	13.7	0.0	1.0

NACE Section	Type of non-exhaustiveness					Total	As % of GDP	As % of initial value added
	Non- registered economy	Illegal activities	Producers not required to register	Mis- reporting	Other under- coverage			
	N1	N2	N3	N6	N7			
R	2.2	0.0	0.0	6.8	7.0	16.0	0.1	3.5
S	7.1	2.5	0.0	6.8	1.2	17.5	0.1	7.2
T	0.0	0.0	16.2	0.0	0.0	16.2	0.1	100.0
Total	249.9	84.8	107.5	338.4	670.2	1,450.9	4.6	5.0
% of GDP	0.8	0.3	0.3	1.1	2.1	4.6		

1.4. Outline of the income approach

The GDP by income approach is not independent. Some components such as operating surplus and mixed income are derived residually when balancing supply and use tables. To a large extent, the income approach uses the same sources as the production approach. The two approaches coincide with respect to using survey data and administrative sources. The GDP by income approach is presented in Table 1.5. More details on the income approach can be found in Chapter 4.

Table 1.5 GDP by income approach, 2021

Component	Value (million euros)	% of GDP
Compensation of employees	15,072.7	47.9
..Wages and salaries	11,336.5	35.9
..Social contributions	3,736.2	11.8
Gross operating surplus	12,131.8	38.6
.. Consumption of fixed capital	5,227.9	16.6
..Operating surplus	6,903.9	21.9
Mixed income	643.1	2.0
Taxes on production and imports	4217.1	13.4
Subsidies (-)	611.3	1.9
GDP at market prices	31,453.3	100.0

The GDP by income approach distinguishes the following components: compensation of employees, other taxes on production and imports, other subsidies on production, operating surplus, mixed income and consumption of fixed capital.

1.4.1. Main data sources

Compensation of employees

Compensation of employees is broken down into wages and salaries in cash, wages and salaries in kind and employers' social contributions, both actual and imputed. Compensation of employees is estimated by institutional sector and by activity.

The compensation of employees includes wages and salaries (D.11) and employers' social contributions (D.12). Wages and salaries are paid to the employees working under an

employment contract for a fixed or unfixed period (including contracts for seasonal work), persons with a service contract and employees working under the Public Services Act. Wages and salaries include payments to employees for time actually worked as well as remuneration and payments for days not actually worked, such as vacation pay, compensation and pay for the stoppage of work, pay for short-time working, pay for assimilated leave in the event of vocational training and obtaining formal education, and payments in kind. The measurement of the compensation of employees is in line with ESA 2010, while further adjustments are made for income in kind, tips, hidden activities and envelope salaries.

The sections below provide information on the components of the compensation of employees (wages and salaries in cash, wages and salaries in kind, employers' actual and imputed social contributions) by NACE section and institutional sector (S.11–S.15).

For the activity NACE A in the non-financial corporations sector, the compensation of employees is calculated on the basis of the statistical survey "Annual data of agricultural, forestry and fishing enterprises". For calculating the compensation of employees, adjustments are made for wages and salaries in kind, hidden labour and envelope salaries.

For the activities NACE B – NACE S in the non-financial corporations sector, data on wages and salaries and employers' social contributions are derived from the SBS Survey. Adjustments are made for income in kind, tips paid in restaurants and hotels, envelope salaries and non-registered economy.

For NACE K in the financial sector, the compensation of employees is calculated on the basis of administrative sources of the Estonian Tax and Customs Board. For calculating the compensation of employees, adjustments are made for wages and salaries in kind, hidden labour and envelope salaries.

For the general government sector, most of the data on the compensation of employees are derived from the PSFS system (see Section 3.21). The breakdown of staff costs allows estimating the main categories of the compensation of employees as wages and salaries in cash, wages and salaries in kind and employers' social contributions.

For households, the compensation of employees represents a small part of value added, as it is calculated only for sole proprietors with employees. Declarations on the business income of sole proprietors received from an administrative source (Tax and Customs Board) are used as a data source for estimating wages and salaries and social tax. Sole proprietors have to report the amount of wages and salaries paid to employees, fringe benefits granted to employees, social tax paid on behalf of employees and social tax paid on business income.

Data for the compensation of employees of NPISH are collected with the annual survey of non-profit institutions. Information collected with the questionnaire is grossed up using the Tax and Customs Board data on payments subject to social tax. For the NPISH sector, adjustments are made for the private use of business cars and for daily allowances by allocating 30% of the payments for business trips to the compensation of employees.

Statistics Estonia also makes estimates for hidden labour and envelope salaries. Estimates for hidden labour are based on the labour input method. The Labour Force Survey data are used for comparison of employment data from the SBS and other surveys and for making adjustments for the non-observed economy. Envelope salaries are defined as wages paid but

not reported officially in the business accounts and tax statements. The data source used for the estimation of underreporting of wages and profits is the results of opinion surveys of households by the Estonian Institute of Economic Research, which indicate the scope of envelope salaries.

Other taxes and subsidies on production

Other taxes on production include taxes on land and pollution resulting from production activities, charges for specific exploitation of water resources, fishing-right fees, business and professional licenses, taxes on the use of motor vehicles and advertising. In national accounts, other taxes on production are calculated using information from the declarations of the Tax and Customs Board and Public Sector Financial Statements.

Other subsidies on production include different kinds of support that is provided to enterprises to support their production (excluding support for purchasing capital goods, which is recorded as investment grants). For example:

- subsidies to agriculture that are not recorded as subsidies on products;
- various assistance benefits provided by Enterprise Estonia to enterprises to cover expenditures on training, development, etc.;
- subsidies to cover the cost of labour;
- assistance provided by the Ministry of Culture to support publishing activities (books, music, etc.), different cultural events, etc.;
- support for the development of films and film scenarios, distribution support and other similar support provided by the Estonian Film Foundation (support for the actual production of films does not fall under this category).

Consumption of fixed capital

Consumption of fixed capital is estimated in conjunction with estimates of the capital stock. Estimates of consumption of fixed assets are made by institutional sector. Activity and asset breakdowns are based on the classification of gross fixed capital formation (GFCF).

For calculation of the consumption of fixed capital for assets with a long service life, the linear depreciation method is used, and for assets with a short service life, the geometric depreciation method is used.

Transition from private accounting and administrative concepts to ESA 2010 national accounts concepts

The measurement of the compensation of employees is in line with ESA 2010. Income in kind is a key issue in the transition from business accounting concepts to ESA 2010 concepts. In national accounts, adjustments are made for income in kind and for tips paid in restaurants and hotels and to taxi drivers, which are described in Section 7.1.3.5.2. No adjustments are made for tips in other areas. In addition, for measuring the compensation of employees, estimates are made for envelope salaries (payments to employees that are not accounted for as salaries in business reports for avoiding the social security tax) and for hidden activities, using the labour input method.

1.4.2. Roles of direct and indirect estimation methods

Most of the basic data available for the compensation of employees and other taxes and subsidies on production are directly measured. However, gross operating surplus and mixed income are calculated indirectly as the residual between GDP estimated via the production

approach and the remaining components of the income approach. The consumption of fixed capital is based on an indirect estimation model.

1.4.3. Main approaches taken with respect to exhaustiveness

The main adjustments made in the income approach to ensure exhaustiveness are for income in kind and for tips paid in restaurants, hotels and taxi service activities. No adjustments are made for tips in other areas. In addition, for measuring the compensation of employees, estimates are made for envelope salaries (payments to employees that are not accounted for as salaries in business reports to avoid social security tax) and for hidden activities, using the labour input method. Exhaustiveness adjustments by income component are presented in Table 1.6.

Table 1.6 Exhaustiveness adjustments by income component, 2021
(million euros)

Component	Total	Type of non-exhaustiveness						
		N1	N2	N3	N4	N5	N6	N7
Compensation of employees	422.3	55.1	1.2	0.0	0.00	0.00	214.2	151.8
..Non-financial corporations	408.2	55.1	1.2	0.0	0.0	0.0	214.2	137.8
..Financial corporations	6.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0
..General government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
..Households	7.4	0.0	0.0	0.0	0.0	0.0	0.0	7.4
..NPISH	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Gross operating surplus	354.3	128.5	43.7	0.0	0.0	0.0	117.4	64.8
Mixed income	222.0	66.4	40.0	107.5	0.0	0.0	6.8	1.3
Taxes on production and imports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subsidies	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1.5. Outline of the expenditure approach

The expenditure measure of GDP is derived as the sum of the components of household final consumption expenditure, final consumption expenditure of the general government and NPISH sectors, gross fixed capital formation, changes in inventories, net exports of goods and services. GDP by expenditure approach is presented in Table 1.7. More details on the expenditure approach can be found in Chapter 5.

Table 1.7 GDP by expenditure approach, 2021
(million euros)

Component	Value	% of GDP
Total final consumption expenditure	22,109.3	70.3
..Household final consumption expenditure	15,305.1	48.7
..NPISH final consumption expenditure	538.3	1.7
..General government consumption expenditure	6,265.9	19.9
Gross capital formation	9,734.1	31.0
..Gross fixed capital formation	9,430.4	30.0
..Changes in inventories	218.9	0.7

Component	Value	% of GDP
..Acquisitions less disposals of valuables	84.8	0.3
Exports of goods and services	25,041.8	79.6
Imports of goods and services (-)	25,431.9	80.9
GDP at market prices by expenditure approach	31,453.3	100.0
Statistical discrepancy	0	0
GDP at market prices	31,453.3	100.0

1.5.1. Main data sources

Household final consumption expenditure

In the expenditure approach, the biggest part of final consumption expenditure is formed by household final consumption expenditure (HFCE) – its sources are the Household Budget Survey data, information about the sales of goods and services from SBS, PSFS and information from big suppliers (about water consumption, telecommunication services etc). Data on the expenditures of non-residents in Estonia and residents abroad are obtained from the BOP, which uses the results from the Foreign Visitors Survey for non-residents and the Tourism Survey for residents (carried out by SE).

The data of HFCE, which are based on different sources, are reconciled using the commodity-flow method. Annual HFCE data are calculated at the 4-digit level of COICOP. In most cases, at least two independent estimates are obtained for each COICOP group; in many cases, there are three estimates from which the best estimate is chosen.

HFCE estimates are prepared in accordance with the tabular approach that is used for the compilation of HFCE in Estonia. The tabular approach, developed by Eurostat, presents a set of analytical tables where estimates are obtained in a systematic way and all steps from raw data until the final figures are clearly identified. For HFCE estimates, a bottom-up approach is used. The valuation of HFCE estimates at purchasers' prices is in line with ESA 2010.

In HFCE, attention is paid to the following items, in order to be in line with ESA 2010 requirements: valuation of goods purchased by households under hire-purchase agreements, the service charge concept for insurance services, net recording for lotteries and gambling, the borderline between taxes and services provided to households by the general government, car registration taxes and stamp taxes under HFCE.

NPISH final consumption expenditure

The final consumption expenditure of the NPISH sector is derived as output (the sum of intermediate consumption, compensation of employees, consumption of fixed capital and other taxes on production) minus market sales, production of research and development for own final use and income in kind (fringe benefits) plus humanitarian goods.

The sources for NPISH final consumption estimations are the same as for the production approach.

Government final consumption expenditure

Government final consumption expenditure is estimated on the basis of total output value, from which own-account capital formation and income from the sales of goods and services are excluded and to which social transfers in kind for market goods and services are added.

The data source (PSFS) used for calculation of final consumption expenditure by government is the same as the one used for calculation in the production approach.

Gross fixed capital formation

For all institutional sectors, gross fixed capital formation includes the acquisitions of new and existing tangible assets during the accounting year, including major repairs and land improvement, less disposals of tangible assets. Fixed assets acquired under financial leasing contracts (in the total value of capital goods) as well as own-account construction and major repairs of fixed assets are included in GFCF. Acquisitions less disposals of intangible assets, including own-account produced software and research and development, are also taken into account. Acquisitions of tangible assets are valued at purchaser's prices including installation charges and other costs of ownership transfer.

Gross fixed capital formation is estimated by:

- 1) institutional sector (non-financial corporations, financial corporations, general government, households and non-profit institutions serving households);
- 2) type of fixed assets;
- 3) activity;
- 4) product.

For GFCF, the data sources are as follows: statistical questionnaire "Annual economic indicators of agricultural, forestry and fishing enterprises", the SBS Survey, PSFS system, questionnaire "Insurance statistics", survey of non-profit institutions, information about credit institutions, big leasing companies and pension funds from Eesti Pank.

Changes in inventories

Changes in inventories cover the value of additions to and withdrawals from inventories (including "normal" losses) in accordance with ESA 2010. Changes in inventories are estimated by economic activities, products, institutional sector and type of inventories. For changes in inventories, the statistical questionnaire "Annual economic indicators of agricultural, forestry and fishing enterprises", the SBS Survey and PSFS are used as the main data sources, while data concerning financial activities are gathered via the questionnaire "Financial intermediation and auxiliary services".

Changes in stocks are valued at weighted average prices of the reference period. Holding gains/losses are eliminated from stocks.

Acquisitions less disposals of valuables

Valuables are non-financial goods that are not used primarily for production or consumption, do not deteriorate (physically) over time under normal conditions and are acquired and held primarily as stores of value.

Estimates for acquisitions less disposals of valuables are made in the non-financial corporations sector, financial corporations sector, the general government sector and the households sector.

The SBS Survey, statistical surveys of financial intermediaries, financial auxiliaries and insurance companies, the PSFS system and information from Eesti Pank are the main data sources used.

Exports and imports of goods and services

Exports of goods are recorded at FOB value, which is equivalent to purchasers' prices, while imports of goods in the supply table are valued at CIF, which corresponds to basic prices.

The estimates of the exports and imports of goods are based on the ITGS data produced by Statistics Estonia and the BOP compiled by Eesti Pank. In national accounts, the estimates of the exports of goods follow the same concepts as the BOP.

Data on the exports and imports of services are derived from the BOP statistics compiled by Eesti Pank where transactions are recorded on an accrual basis, i.e. at the time the transaction was concluded between parties, regardless of money not having actually been received or paid. Transactions are recorded at market prices. The 6th edition of the IMF's Balance of Payments Manual provides the methodological basis for the compilation of the BOP.

1.5.2. Roles of direct and indirect estimation methods

Indirect methods are used for the calculations of own-account production of households. Estimates of the production of agricultural products, fuel wood and fishing for own final use, and own-account construction and capital repair of dwellings by households are made based on the HBS and other sources. In addition, indirect estimation methods are used for deriving data on motor vehicles purchased by households.

1.5.3. Roles of benchmarks and extrapolations

HFCE estimates of dwelling services are based on the benchmark extrapolation method, although the calculations are made on the production side. Since the estimates are made based on the 2011 Population and Housing Census (PHC), 2021 is used as the benchmark year. The estimates of dwelling services are reviewed each year when the PHC is conducted (i.e. every 10 years).

1.5.4. Main approaches taken with respect to exhaustiveness

Explicit exhaustiveness adjustments (see Table 1.8) in HFCE cover income in kind, tips and illegal activities. For the exports and imports of goods, explicit exhaustiveness adjustments are made for the smuggling of alcohol, tobacco, fuel, sugar and drugs.

Table 1.8 Exhaustiveness adjustments by expenditure component, 2021
(million euros)

Component	Total	Type of non-exhaustiveness						
		N1	N2	N3	N4	N5	N6	N7
Total final consumption expenditure	72.4		121.6	45.4				-94.5
..Household final consumption expenditure	318.8		121.6	45.4				151.8
..NPISH final consumption expenditure	-3.2							-3.2
..General government consumption expenditure	-243.1							-243.1
Gross capital formation	453.3							453.3
..Gross fixed capital formation	453.3							453.3

Component	Total	Type of non-exhaustiveness						
		N1	N2	N3	N4	N5	N6	N7
..Changes in inventories								
..Acquisitions less disposals of valuables								
Exports of goods and services								
Imports of goods and services	30.5		30.5					
Total	495.3		91.2	45.4				58.8

1.6. Balancing or integration procedure and main approaches to validation

Statistics Estonia compiles national accounts according to the concepts, definitions, classifications and accounting rules of the European System of Accounts (ESA 2010). Gross domestic product is compiled by three different approaches:

- production approach;
- expenditure approach;
- income approach.

In GDP compilation, the production approach is considered to be the most reliable method, because more detailed information is available for this approach and there are more possibilities to verify the estimates against alternative data sources. The expenditure approach is an independent approach as the various expenditure components are completely estimated.

The reconciliation between production, expenditure and income based estimates of GDP is performed in the supply and use tables at the detailed product level. Both the supply and use side aggregates are revised in the balancing process, but the demand side is mostly affected when balancing. Changes in inventories are adjusted in the balancing process, but stocks are not treated as a residual item. The GDP by income approach is not an independent approach as operating surplus and mixed income are derived residually when balancing the supply and use tables.

The SUT provide a framework for compiling consistent and reliable national accounts data. Annual SUT are used for calculating final GDP estimates both at current prices and at constant prices of the previous year. The final SUT-based GDP estimate becomes available 36 months after the end of reference year.

The working format of the SUT includes 160 activities and 261 product groups. The supply and use system covers the following tables, which are produced regularly on a yearly basis: the supply table at basic prices, including a transformation into purchasers' prices, the use tables at purchasers' prices and at basic prices, valuation matrices (trade and transport margins, product taxes and subsidies) and the use tables for domestic output and for imports. In the SUT system, imports are split into five sub-matrices: direct imports, imports of manufacturing services on physical inputs owned by others, imports of goods by trade, imports of services and unspecified imports.

The compilation process of the supply and use tables has four main steps:

- 1) preparation of the initial estimates for the supply at basic prices and for the use at purchasers' prices;
- 2) calculation of the initial valuation matrices to obtain all elements of the use table according to basic price valuation;
- 3) compilation of the initial use tables for domestic output and imports;
- 4) integration of the initial estimates and balancing of the supply and use tables.

For compiling the supply and use tables, Statistics Estonia has implemented NA Builder software.

The process of balancing is carried out in two steps:

- manual balancing;
- final balancing.

The starting point for the balancing process is the supply and use tables expressed at basic prices. The aim of manual balancing is to eliminate the imbalances between the supply and use at the product level. In the final step, the differences between the supply and use side trade margins and the discrepancy between the theoretical and actually paid VAT are removed. The process of balancing is an iteration process of improvements of the initial supply and use estimates, where less reliable estimates are improved step by step.

Both the supply and use side aggregates are adjusted, but the demand side is mostly affected due to balancing (e.g. exports and imports, intermediate consumption, final use). The total amounts of output, intermediate consumption, value added and final consumption of general government are not allowed to change at all.

The final GDP estimates derived from the balanced SUT are independent of the preliminary and semi-definitive GDP estimates.

There are several approaches used in national accounts to validate GDP estimates:

- checks at the individual enterprise level (consistency of data between different statistical surveys, comparison with annual reports from the Business Register, regular cross-checking procedure with the Balance of Payments data on exports and imports of services);
- checks at aggregated level by activity and by institutional sector (comparison with data on social tax from the Tax and Customs Board, employment data from the Labour Force Survey);
- analysis of input-output ratios by activities compared to the previous periods;
- validation of the final SUT estimates against institutional sector and the ROW accounts, which guarantees overall consistency between macroeconomic accounts;
- validation of the final SUT estimates against time-series to ensure consistency over time.

More details on the balancing, integration and validation procedures can be found in Chapter 6.

1.7. Overview of the allowances for exhaustiveness

In Estonia, explicit exhaustiveness adjustments are made for non-registered underground economy, misreporting of economic indicators and illegal activities. Additionally, adjustments are made for income in kind and for tips paid in restaurants and hotels and to taxi drivers. As direct primary data for tips are not available, the calculations are based on NA experts' estimates using all available information.

For 2021 the total non-exhaustiveness adjustments represent 4.6% of GDP, of which 0.8% for non-registered economy, 0.3% for illegal economy, 0.3% for producers not obliged to register, 1.1% for underreporting and 2.1% for other various types of under-coverage.

Explicit exhaustiveness adjustments to GDP estimates by production approach concern all institutional sectors.

In Estonia, the following explicit exhaustiveness adjustments are made:

- non-exhaustiveness identified for absence because of producers that should have registered but did not (underground producers). The estimation of non-registered underground economy refers to the production of intentionally non-registered productive units in the non-financial corporations and households sectors. This type of non-exhaustiveness adjustment is based on the employment method. The discrepancy between employment data from the supply side (based on the Labour Force Survey) and data from the demand side is considered as hidden employment and is used for measuring non-observed production.
- types of non-exhaustiveness identified for absence because of illegal producers that fail to register. In Estonia, the calculations of illegal activities cover prostitution, the production and distribution of drugs, and smuggling of tobacco, alcohol, motor fuel, sugar and medicaments.
- types of non-exhaustiveness identified for exemption, because producers are not obliged to register. These are non-market household producers involved in the production of goods for own consumption or for own fixed capital formation, and construction of and repairs to dwellings, or producers that have some market output but it is below the level at which the producer is expected to register as an entrepreneur.
- types of non-exhaustiveness identified for evasion because of misreporting by producers. Misreporting of economic indicators by producers is considered as one of the most important types of hidden activities in Estonia. The main reason for the underreporting of turnover, wages and salaries and over-reporting of expenses by corporations is the evasion of value added tax, social security contributions and income tax. The principal aim of underreporting of income by unincorporated enterprises is the evasion of income tax payable by sole proprietors. At present, SE makes the following adjustments for misreporting: adjustments to output and value added for underreporting of wages and salaries and profits; adjustments to intermediate consumption and value added for over-reporting of expenses; adjustments to output and value added for underreporting of value added tax (VAT fraud without complicity);
- types of non-exhaustiveness identified because of statistical deficiencies in data. In Estonia, these estimates cover production for own final use by market producers, tips paid in hotels and restaurants and to taxi drivers, and wages and salaries in kind.

The consistency of exhaustiveness adjustments is ensured between the different approaches to GDP.

The income approach is not an independent approach, as some components such as operating surplus and mixed income are derived residually from the production side. In the production approach, all required adjustments are made to achieve exhaustiveness. Therefore, income estimates include all necessary adjustments to achieve exhaustiveness.

The expenditure side uses the majority of exhaustiveness adjustments calculated on the production side. For example, estimates for tips, income in kind, own produced products and also for illegally produced/smuggled goods and services (including narcotics, prostitution and smuggling of alcoholic beverages, tobacco, medicaments, sugar and motor fuel) are obtained directly from the production approach.

A more detailed description of exhaustiveness adjustments can be found in Chapter 7.

1.8. Transition from GDP to GNI

In this section, the outline of the transition from GDP to GNI is given (see Table 1.9). A more comprehensive description of this subject can be found in Chapter 8.

GNI equals GDP minus primary income payable by resident institutional units to non-resident institutional units plus primary income receivable by resident institutional units from the rest of the world (ROW). Primary income mainly comprises compensation of employees and taxes on production and imports paid to the Institutions of the EU, subsidies received from the Institutions of the EU and property income payable to/receivable from the ROW.

Table 1.9 Transition from GDP to GNI, 2021
(million euros)

	Indicator	Value
	Gross Domestic Product	31,453.3
+	Compensation of employees received from the ROW (D.1)	343.3
-	Compensation of employees paid to the ROW (D.1)	144.4
-	Taxes on production and imports paid to the institutions of the EU (D.2)	-67.3
+	Subsidies received from the institutions of the EU (D.3)	181.5
+	Property income received from the ROW (D.4)	1,070.1
	<i>interest (D.41)</i>	277.7
	<i>distributed income of corporations (D.42)</i>	546.4
	<i>reinvested earnings on FDI (D.43)</i>	196.7
	<i>other investment income (D.44)</i>	49.3
-	Property income paid to the ROW (D.4)	2,247.2
	<i>interest (D.41)</i>	212.9
	<i>distributed income of corporations (D.42)</i>	1,247.0
	<i>reinvested earnings on FDI (D.43)</i>	776.5
	<i>other investment income (D.44)</i>	10.7
=	Gross National Income (GNI)	30,724.0

The ROW account compiled by Statistics Estonia is based on the Balance of Payments (BOP) compiled by Eesti Pank.

The BOP accounts are compiled according to the methodological principles outlined in the 6th Edition of the IMF Balance of Payments and International Investment Position Manual (BPM6), which is consistent with ESA 2010 principles.

Integration of the BOP accounts with the national accounts is reinforced by the concordance between BOP concepts and the ROW account for definitions of residence, valuation, time of recording of transactions and currency conversion procedures. The national BOP registers transactions using current market prices and the accrual concept of accounting, which is consistent with the national accounts requirements.

Thus, output is recorded when produced, not when it is paid for by a purchaser, and the sale of assets is recorded when the asset changes owners, not when the corresponding payment is made. Interest is recorded in the accounting period when it accrues, regardless of whether or not it is actually paid in that period. Foreign currency transactions are converted to national currency at the market exchange rate prevailing at the time of the transaction.

The BOP compilation system combines statistical surveys of economic agents, the International Transactions Reporting System (ITRS) and administrative data sources. Most of the data are collected directly by Eesti Pank from data providers using surveys. The data are supplemented with information from various administrative sources (including data collected by Statistics Estonia via surveys) and with estimates.

1.9. Main classifications used

The main classification schemes used in the integrated SUT for the estimation of GDP according to the production approach are the activity classification consistent with NACE Rev.2 and the product classification consistent with CPA 2008.

The classification of institutional sectors is based on ESA 2010.

The main classification scheme used for the estimation of GDP according to the income approach is the activity classification based on NACE Rev.2. The level of industry detail used in the income approach is the same as in the production approach.

The main classification schemes used for the estimation of GDP according to the expenditure approach are the purpose classifications of COICOP and COFOG in the field of consumption, the classification of fixed assets and activity classification for gross fixed capital formation. COICOP is quite detailed in the Estonian national accounts with 116 purpose groups.

The classification of the functions of government used for dividing government output and then government final consumption expenditure is based on COFOG 1999 where government functions are split into 10 divisions (1st level). The divisions of the classification are divided into 69 groups (2nd level). COFOG expenditure data are measured for the general government sector at the 2nd level with a breakdown in sub-sectors of government.

The breakdown of activities for gross fixed capital formation is also detailed – altogether 150 non-consolidated activities – but not as detailed as for production. The classification of fixed

assets shows close to 20 groups, including the Pi6 breakdown, and it is cross-classified with/in all institutional sectors (both for fixed assets and activities). More detailed information on classifications can be found in 0.

1.10. Main data sources used

There are many data sources available for national accounts compilation (see Table 1.10). The principle of using administrative data as the first option has led to some changes in the list of data sources used compared to the sources listed in the previous GNI Inventory. In this section, only a summary of the used data sources is presented. Detailed information on all data sources can be found in 0.

Table 1.10 Summary of data sources

Ref. no	Source	Prod.	Inc.	Exp.	GNI
10.1.1.	Structural Business Statistics (SBS)	X	X	X	
10.1.2.	Economic indicators of agricultural, forestry and fishing enterprises	X	X	X	
10.1.3.	Industrial production statistics (PRODCOM)	X			
10.1.4.	Energy and fuels statistics	X		X	
10.1.5.	Statistical survey of non-profit institutions	X	X	X	
10.1.6.	Labour Force Survey	X	X		
10.1.7.	Tax declarations on business income of sole proprietors	X	X	X	
10.1.8.	Tax declarations on customs duties and import taxes (excise on alcohol, tobacco, motor fuel and vehicles)	X			
10.1.9.	Statistics on registration of vehicles	X		X	
10.1.10.	Statistics on research and development in enterprises	X		X	
10.1.11.	Statistics on research and development in non-profit institutions	X		X	
10.1.12.	Public Sector Financial Statements (PSFS)	X	X	X	
10.1.13.	Monthly detailed report on tax accrual	X	X		
10.1.14.	Financial intermediation and auxiliary services survey	X	X	X	
10.1.15.	Insurance statistics	X	X	X	
10.1.16.	Financial statements of Eesti Pank	X	X	X	
10.1.17.	Financial corporations sector statistics	X	X	X	
10.1.18.	Financial statements of Estonian Financial Supervisory Authority (EFSA)	X			
10.1.19.	Leasing sector statistics	X	X	X	
10.1.20.	Literary originals statistics	X			
10.1.21.	Cinematographic film, movies and video statistics	X			
10.1.22.	Radio and television statistics	X			
10.1.23.	Artistic originals statistics	X			
10.1.24.	Forest growth and felling statistics	X		X	
10.1.25.	Wood material roadside price statistics	X		X	
10.2.1.	Population and Housing Census of 2011		X	X	
10.2.2.	Declaration of payments of income tax, social tax and mandatory funded pension and unemployment insurance premium		X		
10.2.3.	Reports on fringe benefits granted to employees		X		
10.2.4.	Estonian Social Survey	X	X	X	
10.3.1.	Household Budget Survey (HBS)	X	X	X	
10.3.2.	Environmental statistics			X	

Ref. no	Source	Prod.	Inc.	Exp.	GNI
10.3.3.	Education statistics			X	
10.3.4.	Justice and security statistics about penal institutions			X	
10.3.5.	Social protection statistics			X	
10.3.6.	Statistics about compulsory military service			X	
10.3.7.	Statistics about people living in abbeys			X	
10.3.8.	Statistics about travel services			X	
10.3.9.	Register of Construction Works			X	
10.3.10.	Foreign trade statistics: Intrastat			X	
10.3.11.	Foreign trade statistics: Extrastat			X	
10.3.12.	Balance of payments			X	X
10.4.	Other sources used for the transition from GDP to GNI				X

Chapter 2. Revision policy and timetable for revising and finalising the estimates; major revisions since the last version of the GNI inventory

2.1. Revision policy and timetable for revising and finalising the estimates

2.1.1. Data dissemination policy

The dissemination policy of SE is based on the Official Statistics Act, Regulation (EC) No 223/2009 of the European Parliament and of the Council on European statistics, and the European Statistics Code of Practice. The Special Data Dissemination Standard Plus (SDDS+) of the International Monetary Fund serves as a basis for disseminating statistical data since Estonia joined in October 1998. The standard sets minimum requirements for the content of data, dissemination periodicity and timeliness across statistical domains. The dissemination policy⁵ of SE is published on its website.

Pursuant to the Official Statistics Act, users have to be notified of the release dates of statistics three months in advance. Therefore, the release calendar for the following calendar year is published on the website no later than three months before the beginning of the following calendar year. On 1 October each year, the release dates of the Statistical Database, news releases, public use files in the following year are announced in the release calendar. Simultaneous access to official statistics ensures equal treatment of users.

National accounts statistics, press releases, analyses and statistical tables are published on the website of Statistics Estonia according to the release calendar⁶. No pre-publication data dissemination, other than between official statistics producers, is allowed in any circumstances, and this rule is strictly followed.

2.1.2. Revision principles

The national accounts figures for the reference period are published several times. Regular revisions depend on the availability of data sources. The revision policy allows the new source data to be included in the national accounts datasets, including the GNI figures due to the needs of GNI for own resources purposes. The timetable for revising the annual accounts is shown in Table 0.1.

The first annual GDP estimates based on quarterly data are published 2 months after the end of the year together with the publication of the fourth quarter for the previous year. The second release of GDP estimates is 8 months after the end of the year, when also the regular annual revision of the last three years is published. The semi-final GDP estimates are published 20 months after the reference period based on the yearly reports of enterprises and public institutions. Final GDP data are derived from the supply and use tables 36 months after the reference period. As of 2022, the regular annual revision is released in the middle of August, i.e. two weeks earlier than presented in Table 2.1.

⁵ <https://www.stat.ee/en/statistics-estonia/about-us/strategy/principles-dissemination-official-statistics>

⁶ <https://www.stat.ee/en/calendar>

Table 0.1 Data sources by current publication cycle

Annual accounts	Number of days/months after the end of reference year	Main data sources
First provisional GDP estimates based on quarterly data	T + 2 months	Short term statistics, PSFS, monthly detailed report on tax accrual, financial intermediation and auxiliary services survey, financial statements of Estonian Financial Supervisory Authority, leasing sector statistics, HBS, reports on fringe benefits granted to employees, foreign trade statistics: Intrastat and Extrastat, balance of payments, price indices, monthly data about VAT and income tax from Tax and Customs Board
Second provisional GDP estimates based on quarterly and detailed data for the previous year	T + 8 months	Short term statistics, PSFS, monthly detailed report on tax accrual, financial intermediation and auxiliary services survey, financial statements of Estonian Financial Supervisory Authority, leasing sector statistics, HBS, reports on fringe benefits granted to employees, foreign trade statistics: Intrastat and Extrastat, balance of payments, price indices, monthly data about VAT and income tax from Tax and Customs Board
Semi-final GDP estimates based on annual data	T + 20 months	SBS, PSFS, monthly detailed report on tax accrual, economic indicators of agricultural, forestry and fishing enterprises, industrial production statistics, statistical survey of non-profit institutions, PSFS, monthly detailed report on tax accrual, financial intermediation and auxiliary services survey, financial statements of Estonian Financial Supervisory Authority, leasing sector statistics, HBS, reports on fringe benefits granted to employees, foreign trade statistics: Intrastat and Extrastat, balance of payments, price indices. For more information, refer to Chapter 10.
Final GDP estimates derived from SUT	T + 36 months	Data sources are the same as for semi-final estimates but on the product level.

In 2015, Statistics Estonia and Eesti Pank harmonised and implemented the principles for revising official statistics in the domains of external sector statistics and the sub-accounts of national accounts (GDP, government finance statistics, quarterly and annual non-financial and financial accounts). The new harmonised revision policy is in line with the principles of the revision policy recommended by the European Commission and the European Central Bank.

According to the revision policy, revisions can be regular or extraordinary:

- a). Regular or routine revision, generally to accommodate new or corrected data or other additional information, means that:
 - 1). When the statistics for Q1, Q2 and Q3 are first published, the statistics only for the preceding quarter are adjusted. No revisions to annual data are foreseen at that stage.
 - 2). When the statistics for Q4 are first published, the statistics for Q1, Q2 and Q3 of the same year are adjusted. If necessary, the quarters of the previous two years (T-2 and T-3) may also be corrected, adding up to 11 quarters in total.
 - 3). Once a year the estimates for up to 4 preceding years are revised. The results are published in August (National Accounts), September (Rest of the World) and October (Financial Accounts).

b). Extraordinary revision means that:

- 4). In exceptional cases, when significant errors or omissions have occurred, the data for earlier quarters/years affected may be revised when new data are released.
- 5). If the methodology or the data collection system changes, data from earlier periods can be adjusted as far back as possible when new data are released.
- 6). Extraordinary changes are announced publicly in press releases and on the website.

SE publishes the details of national accounts revisions on the website⁷.

Major revisions, as defined in ESS Guidelines on revision policy, are changes in published data, often substantial, which are due to one of the following reasons:

- 1). availability of a new structural source that is only collected at long intervals (5 to 10 years), such as the census, input-output tables, labour cost surveys, etc.;
- 1). an update of the weights of the base year of an index series, often every five years;
- 1). a change in the concepts, definitions and/or classifications used to produce the series; for example, the adoption of a new classification or changes in international statistical standards;
- 1). entry into force of a new legal act.

Major revisions are communicated well in advance and usually applied to the complete time series. Regular major revisions are carried out every five years. In recent years, the major revisions carried out by SE have coincided with the major revisions agreed in ESS. In September 2014, the transition to ESA 2010 methodology was implemented and the national accounts time series for years 2000–2013 were published. The transition to ESA 2010 for the years 1995–2000 was completed in 2015. The most recent major revision of national accounts data took place in 2024.

2.2. Major revisions since the last version of the GNI Inventory

The latest major revision in 2024 involved the implementation of some methodological changes. These changes were the result of the GNI verification process. In addition, there were updates to source data from the annual revision cycle (see subchapter 2.1.2.a.3). In 2021, the impact of the changes on the GNI was -0.8%. The impact on each item for the year 2021 is provided in

⁷ <https://www.stat.ee/en/gdp-revision>

Table 0.2. Transversal reservations have not had any impact on GNI at this time. There have been no other major revisions since the last version of the GNI Inventory.

Table 0.2 The impact of changes made during the revision in 2024 on GNI for 2021 (million euros)

GNI and its components		Impact of methodological changes		
		Changes in dwelling stock methodology	Adjustment of renewable energy charges	Total
Production approach				
P.1	Output of goods and services	-69.4	-132.8	-202.2
P.2	Intermediate consumption	-18.7		-18.7
B.1g	Gross value added	-50.7	-132.8	-183.5
D.21	Taxes on products			
D.31	Subsidies on products			
Expenditure approach				
P.3 (S.14)	HFCE	-69.1		-69.1
P.3 (S.15)	NPISH FCE			
P.3 (S.13)	GG FCE		-132.8	-132.8
P.5	Gross capital formation			
P.51g	GFCF			
P.52	Changes in inventories			
P.53	Acquisition less disposals of valuables			
P.61	Exports of goods			
P.62	Exports of services			
P.71	Imports of goods			
P.72	Imports of services			
Income approach				
D.1	Compensation of employees		-132.8	-132.8
B.2g/B.3g	Gross operating surplus/mixed income	-51.5		-51.5
	Consumption of fixed capital	0.8		0.8
D.2	Taxes on production and imports			
D.3	Subsidies			
B.1g	GDP	-50.7	-132.8	-183.5
B.5g	GNI	-50.7	-132.8	-183.5
Impact on GNI, %		-0.23	-0.61	-0.84

2.2.1. Changes in the methodology of dwelling stock

The 2021 Population and Housing Census indicated that there has been a considerable rise in the share of privately rented dwellings. As a result, the user cost method used so far was no longer feasible. To provide more accurate estimates, a new, more detailed method was introduced for apartments to take into account the location, size and age of the dwelling. As a result, the stratification method was adopted for the dwelling stock. This change affected the output of non-financial corporations and households, and household final consumption expenditure. For 2021, the impact on GNI was 0.2%.

2.2.2. Adjustment of renewable energy charges

In the 2024 major revision, the new tax (D.214A – renewable energy charge) was implemented. The renewable energy charge is a fee through which electricity consumers finance the renewable sources or efficient cogeneration in Estonia. Based on the item C.3.b.4 concerning RES subsidies, discussed at the meeting of the Excessive Deficit Procedure Statistics Working Group (EDPS WG) on 7–8 December 2022⁸, the Estonian statistical authorities recognised a tax-subsidy scheme for the renewable energy charge. Therefore, the relevant revisions to D.21/D.39 can be seen in the years 2018–2022. Since renewable energy subsidies are essentially support for specific production methods, these were excluded from output and included under subsidies on production. As a result, both gross output and value added decreased. This adjustment had no major impact on GNI.

2.2.3. Transaction-specific reservation on output of forestry industries

During GNI verification, Estonia received an Action Point to evaluate the possible impact of forestry accounts on the GNI and, if deemed necessary, to include the results into national accounts estimates. In order to accomplish that, the National Accounts Team started working closely with the Environmental Statistics Team who are developing the methodology according to international guidelines for European Forestry Accounts. These estimates are also required to match with NA estimates.

The pilot project was completed by June 2023. The pilot project focused on gathering information on data sources and developing the methodology for estimating forestry output. Further work focused on microdata. The development of Forestry Accounts will be concluded in 2025 after which the integration into national accounts can continue.

2.2.4. Transversal reservation I on production of electricity by households

Eurostat requires Member States to estimate the impact of households producing electricity. This means that Member States are required to assess the recording of electricity sold to the grid as well as the recording of electricity produced for own use. For this research, Estonia received a grant from Eurostat that will cover all the necessary methodological developments. The research is expected to be completed by March 2026. Following the research, SE will assess the need for and extent of implementation of the reservation.

The deadline for the implementation of the reservation is September 2026.

2.2.5. Transversal reservation II on treatment of non-resident VAT traders

Eurostat requires Member States to assess the recording of non-resident VAT traders within NA. For this purpose, all appropriate data sources need to be examined and the recording of non-resident VAT traders analysed. This work is being done in cooperation with BOP statisticians at Eesti Pank (the central bank of Estonia).

The deadline for the implementation of the reservation is September 2026.

⁸ <https://circabc.europa.eu/ui/group/62beb55b-12fb-4cee-9a25-6d91584400be/library/224d3f15-0481-42db-aeel-2412b6ecb034/details>

2.3. Planned actions for improvements

The improvement of GNI continues on multiple fronts:

- The work on transversal reservations continues as mentioned in subchapters 2.2.4.–2.2.5.
- Work is being done on the integration of forestry accounts into NA.
- The compilation process of supply-and-use tables is being reviewed and integrated more closely with NA main indications. This is done to increase the timeliness of SUT, which would also decrease the need for revisions in NA. In addition, source data and base statistics are expected to be improved through automated estimation processes and new administrative data sources.

Chapter 3. The production approach

3.0. GDP according to the production approach

The production measure of GDP is derived from the supply and use tables integrated into the national accounts from the year 2000 onwards. GDP by production approach is estimated by economic activity from the data compiled by institutional sectors. In the production approach, altogether 160 activities are distinguished, broken down by institutional sector and by type of producer. The production approach is considered to be the most reliable approach because of the availability of more detailed information and a better possibility to compare estimates obtained from many alternative data sources.

The breakdown of output, intermediate consumption and gross value added (GVA) by NACE Section is shown in Table 3.1.

Table 3.1 GDP by production approach, 2021
(million euros)

NACE Section	Output	Intermediate consumption	Gross value added
Agriculture, forestry and fishing (A)	2,172.4	1,561.0	611.3
Mining and quarrying (B)	332.3	185.0	147.4
Manufacturing (C)	15,575.8	11,477.1	4,098.7
Electricity, gas, steam and air conditioning supply (D)	1,841.6	946.6	895.1
Water supply; sewerage, waste management and remediation activities (E)	941.1	711.4	229.7
Construction (F)	4,873.0	3,062.8	1,810.2
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	6,542.9	3,087.3	3,455.6
Transportation and storage (H)	5,415.1	3,634.0	1,781.1
Accommodation and food service activities (I)	868.6	521.0	347.7
Information and communication (J)	4,326.9	2,441.2	1,885.7
Financial and insurance activities (K)	1,878.5	613.7	1,264.8
Real estate activities (L)	4,599.8	1,421.5	3,178.3
Imputed rents of owner-occupied dwellings (part of L)	2,085.3	354.5	1,730.8
Professional, scientific and technical activities (M)	3,594.6	1,840.4	1,754.2
Administrative and support service activities (N)	1,722.8	770.0	952.8
Public administration and defence; compulsory social security (O)	2,575.4	878.4	1,697.0
Education (P)	1,747.1	424.2	1,322.8
Human health and social work activities (Q)	2,123.3	755.8	1,367.5
Arts, entertainment and recreation (R)	928.2	469.0	459.2
Other service activities (S)	568.1	324.5	243.6
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (T)	16.2	0.0	16.2
Total	62,643.7	35,124.8	27,518.9
Taxes on products			4,061.2
Subsidies on products (-)			126.8
GDP at market prices			31,453.3

Output and value added at basic prices as well as intermediate consumption at purchasers' prices by activity and by institutional sector are presented in Table 3.2.

Table 3.2 GDP by production approach by NACE Section and by sector, 2021
(million euros)

NACE Section	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Agriculture, forestry and fishing (A)						
output	2,172.4	1,972.3	0.0	0.0	200.1	0.0
intermediate consumption	1,561.0	1,465.6	0.0	0.0	95.4	0.0
value added	611.3	506.7	0.0	0.0	104.6	0.0
Mining and quarrying (B)						
output	332.3	332.3	0.0	0.0	0.0	0.0
intermediate consumption	185.0	185.0	0.0	0.0	0.0	0.0
value added	147.4	147.4	0.0	0.0	0.0	0.0
Manufacturing (C)						
output	15,575.8	15,544.3	0.0	0.0	31.5	0.0
intermediate consumption	11,477.1	11,461.8	0.0	0.0	15.3	0.0
value added	4,098.7	4,082.5	0.0	0.0	16.2	0.0
Electricity, gas, steam and air conditioning supply (D)						
output	1,841.6	1,841.6	0.0	0.0	0.0	0.0
intermediate consumption	946.6	946.6	0.0	0.0	0.0	0.0
value added	895.1	895.1	0.0	0.0	0.0	0.0
Water supply; sewerage, waste management and remediation activities (E)						
output	941.1	940.6	0.0	0.0	0.5	0.0
intermediate consumption	711.4	711.1	0.0	0.0	0.3	0.0
value added	229.7	229.5	0.0	0.0	0.2	0.0
Construction (F)						
output	4,873.0	4,610.2	0.0	0.0	262.8	0.0
intermediate consumption	3,062.8	2,914.4	0.0	0.0	148.4	0.0
value added	1,810.2	1,695.8	0.0	0.0	114.4	0.0
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)						
output	6,542.9	6,480.6	0.0	0.0	62.3	0.0
intermediate consumption	3,087.3	3,072.9	0.0	0.0	14.3	0.0
value added	3,455.6	3,407.6	0.0	0.0	48.0	0.0
Transportation and storage (H)						
output	5,415.1	5,146.2	0.0	211.7	57.2	0.0
intermediate consumption	3,634.0	3,524.0	0.0	82.2	27.9	0.0
value added	1,781.1	1,622.2	0.0	129.6	29.3	0.0
Accommodation and food service activities (I)						
output	868.6	862.6	0.0	0.0	6.1	0.0
intermediate consumption	521.0	516.3	0.0	0.0	4.7	0.0
value added	347.7	346.2	0.0	0.0	1.4	0.0

NACE Section	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Information and communication (J)						
output	4,326.9	4,186.9	0.0	134.4	5.6	0.0
intermediate consumption	2,441.2	2,407.3	0.0	31.2	2.7	0.0
value added	1,885.7	1,779.5	0.0	103.2	3.0	0.0
Financial and insurance activities (K)						
output	1,878.5	0.0	1,871.2	0.0	7.3	0.0
intermediate consumption	613.7	0.0	613.0	0.0	0.7	0.0
value added	1,264.8	0.0	1,258.2	0.0	6.6	0.0
Real estate activities (L)						
output	4,599.8	2,161.4	0.0	105.3	2,274.7	58.4
intermediate consumption	1,421.5	947.8	0.0	70.1	388.0	15.6
value added	3,178.3	1,213.6	0.0	35.2	1,886.7	42.8
Imputed rents of owner-occupied dwellings (part of L)						
output	2,085.3	62.6			2,022.7	
intermediate consumption	354.5	19.3			335.2	
value added	1,730.8	43.3			1,687.5	
Professional, scientific and technical activities (M)						
output	3,594.6	3,196.6	0.0	308.1	89.9	0.0
intermediate consumption	1,840.4	1,761.6	0.0	60.8	18.0	0.0
value added	1,754.2	1,435.0	0.0	247.3	71.9	0.0
Administrative and support service activities (N)						
output	1,722.8	1,705.1	0.0	0.0	17.7	0.0
intermediate consumption	770.0	761.6	0.0	0.0	8.4	0.0
value added	952.8	943.6	0.0	0.0	9.2	0.0
Public administration and defence; compulsory social security (O)						
output	2,575.4	0.0	0.0	2,575.4	0.0	0.0
intermediate consumption	878.4	0.0	0.0	878.4	0.0	0.0
value added	1,697.0	0.0	0.0	1,697.0	0.0	0.0
Education (P)						
output	1,747.1	138.5	0.0	1,514.3	6.5	87.7
intermediate consumption	424.2	69.4	0.0	316.6	3.2	35.0
value added	1,322.8	69.1	0.0	1,197.7	3.3	52.7
Human health and social work activities (Q)						
output	2,123.3	811.7	0.0	1,235.9	19.3	56.4
intermediate consumption	755.8	307.4	0.0	418.6	7.3	22.5
value added	1,367.5	504.3	0.0	817.3	11.9	34.0
Arts, entertainment and recreation (R)						
output	928.2	405.2	0.0	322.5	7.4	193.2
intermediate consumption	469.0	227.0	0.0	110.9	3.2	127.9
value added	459.2	178.2	0.0	211.6	4.2	65.2
Other service activities (S)						
output	568.1	282.1	0.0	3.9	50.2	231.8

NACE Section	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
intermediate consumption	324.5	159.0	0.0	1.2	26.1	138.2
value added	243.6	123.2	0.0	2.7	24.1	93.6
Activities of households as employers of domestic personnel and undifferentiated goods and services production of households for own use (T)						
output	16.2	0.0	0.0	0.0	16.2	0.0
intermediate consumption	0.0	0.0	0.0	0.0	0.0	0.0
value added	16.2	0.0	0.0	0.0	16.2	0.0
Total						
output	62,643.7	50,618.2	1,871.2	6,411.5	3,115.3	627.5
intermediate consumption	35,124.8	31,438.7	613.0	1,970.0	763.9	339.2
value added	27,518.9	19,179.5	1,258.2	4,441.5	2,351.4	288.3

3.1. Reference framework

Chapter 10 gives an overview of the main data sources for the national accounts. Most data for the compilation of output (by market producers, producers of goods and services for own final use and non-market producers) and intermediate consumption are obtained from statistical surveys and administrative sources.

3.1.1. Business register

The Estonian Statistical Business Register (SBR) was established in 1994. In the creation of the register, the provisions of EU legislation, especially those of the Business Register Regulation No 177/2008 were taken into account. The SBR data are used for all areas of statistics, with the exception of population surveys.

Coverage and the type of statistical units available in the business register

The SBR includes all economic units that operate in Estonia: enterprises, sole proprietors, non-profit associations, foundations, central and local government institutions, except households and the embassies of foreign countries.

All sectors of the economy including the agricultural sector are covered. For keeping records on agricultural households, the Statistical Register of Agricultural Holdings was created in 2002. The main sources for this register are the Estonian Agricultural Registers and Information Board and the Estonian Agricultural Board.

The SBR includes different sets of information on different statistical units. The common data for all units include the identification (ID) number and contact information. For legal units, a unique identification number is used, which is received from legal registers. This unique number is also used by all legal units in all official proceedings in Estonia. In addition, all statistical units in the statistical register have their own unique internal identification code. The variables of the units include (in addition to the ID number and contact data): principal and secondary activity, number of persons employed and number of employees, turnover, form of ownership and legal form, institutional sector code, dates of registration and liquidation etc.

All statistical units are classified by:

- 1) economic activity (the Estonian Classification of Economic Activities (EMTAK) is used at the 5-digit level, which is consistent with NACE Rev. 2 at the 4-digit level);
- 2) legal form;
- 3) form of ownership (a classification of its own was developed by Statistics Estonia in 1996 in order to enable the identification of foreign-, state- or privately owned units);
- 4) institutional sector code;
- 5) geographical location (the Classification of Administrative and Settlement Units of Estonia is used; in addition, the European classification NUTS has been implemented).

The SBR includes the following statistical units: legal unit, enterprise, local unit, kind-of-activity unit and local kind-of-activity unit. In the vast majority of cases, one enterprise equals one legal unit, except for cases where one enterprise equals several legal units. There are no administrative sources for the data of local units in Estonia. Data on local kind-of-activity units are collected by a special survey, which is part of the annual Structural Business Statistics Survey and is used for compiling the statistical units “Local Unit” and “Kind-of-Activity Unit”. The SBR also includes data on enterprise groups.

SE implemented profiling several years ago. A special working group, which consisted of representatives from statistical domains (SBR, SBS, STS, NA), methodology and IT departments, was organised at the end of 2015. The working group mapped out the activities and responsibilities in connection with the introduction of the statistical unit “enterprise” (ENT), including the needs for development of data collection and editing software.

An analysis of enterprise groups was carried out to define the target population, scope of the profiling activity and the method of profiling. Taking into account the results of the SBS project of automatic profiling on SBS data and the fact that the methodology for consolidation of the data by statisticians had not yet been developed, a decision was made to choose an intensive method of profiling and implement this for economically significant cases only. By the end of 2016, two ENTs were created.

Updating the register

The data on legal units are updated based on the following administrative registers: the Business Register, the Non-Profit Associations and Foundations Register, and the State Register of State and Local Government Agencies.

Newly registered units, de-registrations, mergers, acquisitions and other structural changes as well as changes in the demographic and identification characteristics, including addresses and contact data, are received from the administrative registers and uploaded at the level of legal units of the statistical register once a month. For legal units, a unique identification number is used, which is received from legal registers. This unique number is also used by all legal units in all official proceedings in Estonia.

The number of employees, net turnover and data on legal units that have cross-border transactions are received monthly from the Tax and Customs Board. Statistical surveys and databases of professional associations are also used as a source for updating the register data. All appropriate changes are uploaded at the level of statistical units. Audit fields (data source, date, name of the modifier) are implemented for all variables. The date of last check is additionally implemented for contact details and the main activity code.

The Statistical Profile (SP) is the preliminary frozen frame of active units produced on the basis of SBR data. It is used as a basis for the production of all economic statistics and also for a part of agricultural and social statistics. The SP is compiled by 1 November every year and is used for the production of Structural Business Statistics (SBS) of the same year and short-term statistics of the following year. All economically active units and all units active during at least a part of the reference period are included in the SP. In special cases, changes (including/excluding units, changes in stratification data) are made in the frozen frame if the number of persons employed in the unit is 50 or more or if the data significantly influence a certain field of statistics.

The final frame of active economic entities, which is named the Calendar Statistical Profile (CSP), was compiled for the first time for the year 2021⁹. The final frame of active enterprises can be compiled in official statistics by November of the year following the reference year when most of the annual data are available. This frame is used to produce annual business statistics, such as business demography statistics, structural business statistics etc. Unlike the preliminary frame, the final frame covers entities that were active during the calendar year, including those that were only active in the final months of the year. The main source for updating the frame of active economic entities is annual reports. These can also be used to identify the “signs of life” indicating economic activity of micro-enterprises, i.e. enterprises that are not registered for VAT (annual turnover up to 40,000 euros) and have no paid employees and for which no other sources of information are available. In 2021, for instance, small enterprises were added to the final frame of active economic entities mainly in service activities. The share of these enterprises in economic indicators such as turnover is not very high.

The number of units included in the SP in 2015–2021 is shown in Table 3.3.

Table 3.3 Units in the Statistical Profile by legal form

Number of units	2015	2016	2017	2018	2019	2020	2021 SP/CSP
Companies and branches of foreign companies	90,909	95,464	103,552	108,615	111,819	117,090	125,855/131,359
Non-profit associations, foundations and government institutions	34,291	34,331	30,135	42,358	42,970	43,950	44,887/45,844
Sole proprietors*	26,489	24,986	24,070	23,035	21,965	20,890	19,862/16,811
Total	151,689	154,781	157,757	174,008	176,754	181,930	190,604/194,014

*The number of sole proprietors registered in the Business Register. Since 1 January 2010, all sole proprietors have an obligation to register in the Business Register.

Small units in the SBR

There is no cut-off threshold for small units in the SBR. A certain cut-off threshold is used in the frozen frames:

- 1) Small enterprises without employees and with a net turnover below 40,000 euros are not obliged to pay taxes; thus, these enterprises are included in the register but are not

⁹ A brief explanation of initial and final frames is available on SE's website:

https://www.stat.ee/sites/default/files/2023-01/Frame%20of%20active%20economic%20entities_0.pdf

fully covered by the preliminary frame. From the year 2021, these units are covered by the final frame.

- 2) The following threshold was set for enterprises in the final frame: employees > 0 or sales revenue $\geq$ 781 euros or investments $\geq$ 5,000 euros.

In national accounts, these units are currently included in GDP estimates as non-exhaustiveness type N1. No explicit adjustments are made for types N4 and N5. More information on exhaustiveness is given in Chapter 7.

Financial corporations in the SBR

For the production of economic statistics for financial corporations, the SBR is used as a reference framework. It includes all units engaged in financial intermediation, including monetary financial institutions, other financial intermediaries, financial auxiliaries, investment funds, insurance corporations and pension funds registered in Estonia. At the end of 2021, the SBR included 4,569 units classified as financial corporations, of which 3,345 were economically active. Data on units belonging to the financial sector are updated in close cooperation with Eesti Pank. For more information about financial corporations, see description in Section 3.1.2.2.

Government institutions in the SBR

The units of the general government in the SBR are based on the State Register of State and Local Government Agencies, which is maintained by the Ministry of Justice and includes information on state and local government institutions. In addition, data on general government units from the Public Sector Financial Statements (PSFS) are used for updating the SBR. The same lists of government sector and sub-sector units are used in the information system of Public Sector Financial Statements and for the compilation of government financial statistics according to the European System of Accounts (ESA 2010). Therefore, no adjustments are made to correct the sector classification of units. For more information about the general government units, see description in Section 3.1.2.3.

Based on the ESA 2010 methodology, in 2021, the general government sector included a total of 2,373 establishments, public-legal units, foundations and enterprises acting as non-market producers whose economic activities were included in government finance accounting. This number included 273 central government units, 2,098 local government units and 2 social security funds.

Table 3.4. Number of units in the general government sector by sub-sector, 2021

Sub-sector code	Sub-sector	Total
S.1311	Central government	273
S.1313	Local government	2,098
S.1314	Social security funds	2
Total		2,373

Treatment of private non-profit institutions, non-profit institutions serving businesses and non-market producers in the SBR

The data of non-profit associations for the SBR are received from the Non-Profit Associations and Foundations Register. Starting from 2010, all non-profit institutions (NPIs) and foundations are obliged to submit their annual reports to the Business Register. The units that did not present their reports were removed from the Business Register. Data from the Tax and Customs Board

and data received by survey forms are also used for updating the SBR. For more information about the NPIs, see description in Section 3.1.2.5.

Treatment of unincorporated enterprises (Estonian acronym – FIE) in the SBR

The SBR includes sole proprietors registered in the Business Register. Until 2010, only sole proprietors whose annual net turnover exceeded 16,000 euros were obliged to register in the Business Register. The rest were registered only in the Register of Taxable Persons. Since 1 January 2010, all sole proprietors have an obligation to register in the Business Register. For more information about unincorporated enterprises, see description in Section 3.1.2.4.

Branches (unincorporated enterprises belonging to a non-resident unit)

To be able to operate in Estonia, branches of foreign companies (like other economic units) must be registered in the Business Register. At the end of 2021, the population of active units included 231 branches, of which 192 had employees.

As a rule, data on Estonian enterprises' branches abroad are missing from the statistical register. Data are available in the EuroGroups Register (EGR) if the NSIs of the countries where the branches are located have provided EGR with such information.

Special Purpose Entities (SPEs)

Eesti Pank cooperates with the national statistical institution (NSI) to identify SPEs, based on a memorandum of understanding between the two institutions, see description in Section 3.1.2.7.

Identification of resident units belonging to Multi-National Enterprise Groups (MNEs)

Enterprise groups were included in the SBR in 2005. Until 2013, the register contained information on two types of enterprise groups: foreign-controlled enterprise groups (with a group head located outside Estonia) and all-resident enterprise groups. Since 2013, the statistical register also includes information on Estonian multinational groups (domestically controlled groups with at least one foreign subsidiary). The main sources for the register of groups are the database on ownership relations between legal units and the data from annual reports, which are both managed by the Business Register. An additional source for data on foreign subsidiaries of Estonian MNEs is the Balance of Payments – the data are received from Eesti Pank. Data from the EuroGroups Register are used to complete the groups' structures and to validate the global group head (GGH) of foreign-controlled MNEs. All resident legal units and foreign units that have relations with Estonian units have LEID numbers if these are matched with the EGR.

3.1.2 Sector classification

This section provides an explanation of the institutional sectors and the main sources used for each institutional sector. It describes the treatment of unincorporated enterprises, private non-profit institutions, non-profit institutions serving businesses and non-market producers, and their allocation to institutional sectors. The main sources used for each institutional sector are described in more detail in Chapter 10. In this sub-chapter, a brief description is given of how the requirements relating to the quality of the statistical sources used for the production approach are met.

SE follows the institutional sector approach in respect of the data compilation for the production and income approach. Five institutional sectors are distinguished: non-financial corporations, financial corporations, general government, NPISH and households. Each sector is broken down into activities or into activities and sub-sectors. In the supply and use tables (SUT), a total

of 160 activities are distinguished, of which 67 activities are in the non-financial corporations sector, 3 activities are in the financial corporations sector, 17 activities are in the general government sector, 6 activities are in the NPISH sector and 68 activities are in the households sector. The consolidated number of activities (without 4 illegal activities introduced in NA) is 70.

The initial estimates of output and intermediate consumption are made separately for each institutional sector by activities and products. Next, the data are integrated into a SUT database for balancing.

3.1.2.1. Non-financial corporations sector (S.11)

In the non-financial corporations sector, altogether 66 activities are distinguished.

The non-financial corporations sector includes national and foreign-controlled private corporations, public companies, branches of foreign companies, non-profit institutions engaged in the market production of educational and other services, business and employers' organisations serving non-financial corporations. Head offices classified in NACE Rev. 2 under Class 701 of Section M are allocated to sector S.11. Sole proprietors identified as being quasi-corporations are also included.

According to the 2010 revision of ESA, some companies are classified from sector S.11 into S.13 because they provide services only to the government sector or are created to manage some specific assets and are mostly receiving income from the government sector. For more information about the reclassification of units, see the market/non-market test for public sector units described in Section 3.1.2.3.

The main source of data for the non-financial corporations sector is the annual statistical survey "Structural Business Statistics" (EKOMAR – enterprise's complex annual questionnaire) that provides comprehensive information for the calculation of output, intermediate consumption, value added and its components, GFCF and changes in inventories.

The SBS survey covers all activities in NACE Rev. 2 Sections A to S with the exception of financial and insurance services (Section K), public administration and defence; compulsory social security (Section O) and activities of membership organisations (Division 94). Besides the activities that are obligatory based on the SBS regulation, the survey also covers education (Section P), human health and social work activities (Section Q), arts, entertainment and recreation (Section R) and other personal service activities (Divisions 95 and 96).

Until 2012, the data of EKOMAR were partially collected with a sample survey. Units with 20 or more persons employed were all included in the sample, i.e. they were completely accounted. A random sample was selected from the remaining units, whereas the population was stratified (i.e. divided into subsets or strata) before sampling and a simple random sample was selected independently from each stratum. The stratification of the population was based on the number of persons employed and the three-digit code according to the Estonian Classification of Economic Activities EMTAK 2008, which is based on NACE Rev. 2 (Statistical Classification of Economic Activities in the European Communities).

Starting from the reference year 2013, it was decided to use cut-off sampling for manufacturing (NACE C) enterprises, which meant that manufacturing enterprises with 1–9 persons employed were not surveyed at all. For the remaining units, the procedure was the same as before: a

random sample was taken from units with 10–19 persons employed, and the units with 20 or more persons employed were completely enumerated. In this case, it was easy to determine the threshold, as standard size classes are used for enterprises. The smallest enterprises are those with 1–9 persons employed. To replace the data of below-threshold enterprises, administrative data (annual reports data from the Business Register) were used and also simple models were created based on historical EKOMAR data.

Since 2014, construction and retail enterprises (NACE F and G.47) with one person employed are also no longer surveyed, in addition to manufacturing enterprises with 1–9 persons employed.

Since 2015, the rest of industrial enterprises (NACE B, D, E) with 1–9 persons employed and service enterprises (NACE G.45, G.45 and H–T, except K) with one person employed are also no longer surveyed, but the data are estimated by using annual reports and models. Thus, data for industrial enterprises (NACE B–D) with 1–9 persons employed and service enterprises (NACE F–T, except K) with one person employed are estimated by using annual reports and models.

Starting from the reference year 2019, the methodology to obtain the data for EKOMAR is a census – combining the statistical questionnaire and administrative information.

For imputation, the information available from the administrative source, i.e. in annual reports, is used. For characteristics missing in annual reports, model based estimates are used. In case of the absence of annual reports, SE also applies donor imputation, historical imputation (using data from the previous year) and mean value imputation methods. Before 2019, the Horvitz-Thompson estimator was used for grossing-up, i.e. for estimating population totals.

Statistical questionnaires are used to collect data from all larger enterprises, i.e. enterprises with 20 or more persons employed. In addition, statistical questionnaires are used to collect data from enterprises with fewer than 20 persons employed, which had extremely important economic indicators (outliers) in their kind of activity in the previous year.

Administrative data (annual reports data) are received from the Business Register (under the Ministry of Justice) via X-Road¹⁰ once an hour (i.e. within 60 minutes after the report submission). According to the Commercial Code, annual reports should be submitted within six months of the end of the accounting year.

The methodology of the SBS survey is described in more detail in Chapter 10.

The calculation of the output, intermediate consumption and value added components of unincorporated enterprises owned by non-resident units (branches) is carried out once a year and is included in the national accounts figures. The main source is the data on VAT return and paid social taxes obtained from the declarations submitted by the units to the Tax and Customs Board. If there is no income in the sales tax return, production value is calculated based on social tax. Social tax costs are multiplied by the ratio of activity output to social tax costs to calculate the output value. Intermediate consumption is calculated using the formula $P2/P1$ (intermediate consumption / total output) based on the SBS data. If there are no tax data, then the unit is considered inactive.

¹⁰ X-Road, the data exchange layer for information systems, is a technological and organisational environment enabling secure Internet-based data exchange between information systems. <https://www.ria.ee/en/state-information-system/x-tee.html>

3.1.2.2. Financial corporations sector (S.12)

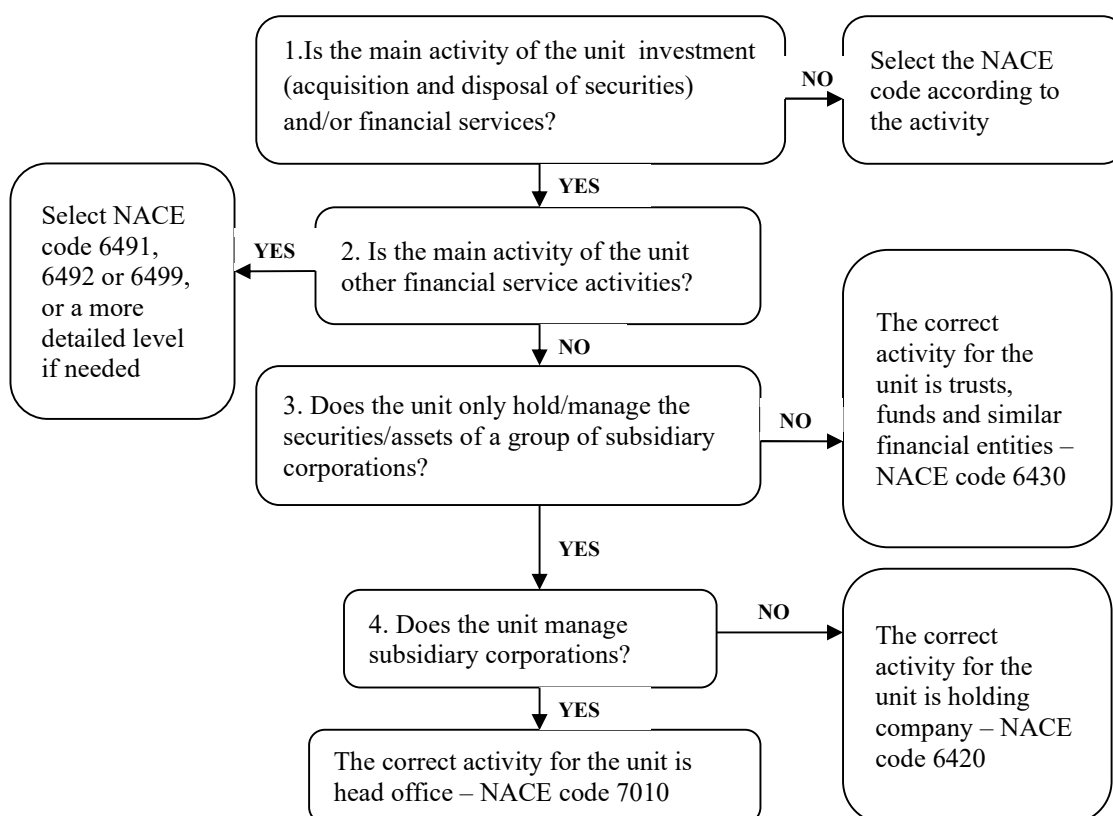
The financial corporations sector is divided into 3 activities and 9 sub-sectors: central bank (S.121), deposit-taking corporations except the central bank (S.122), money market funds (MMF) (S.123), non-MMF investment funds (S.124), other financial intermediaries except insurance corporations and pension funds (S.125), financial auxiliaries (S.126), captive financial institutions and money lenders (S.127), insurance corporations (S.128) and pension funds (S.129). The relation between the sub-sectors and activities is presented in the box below.

Activity code	Activity	Sub-sector	Institution	Comments
F.K.64	Financial service activities, except insurance and pension funding	S.121	Central bank	
		S.122	Deposit-taking corporations except the central bank	
		S.123	Money market funds (MMF)	Do not exist in Estonia
		S.124	Non-MMF investment funds	
		S.125	Other financial intermediaries except insurance corporations and pension funds	
		S.127	Captive financial institutions and money lenders, holding companies	
F.K.65	Insurance, reinsurance and pension funding, except compulsory social security	S.128	Insurance corporations	
		S.129	Pension funds	
F.K.66	Activities auxiliary to financial services, except insurance and pension funding	S.126	Financial auxiliaries	

The classification of holding companies and head offices is consistent with ESA 2010. Enterprises have to specify their NACE code in the Business Register. For this purpose, in co-operation with Statistics Estonia, the Business Register has produced a decision tree to help enterprises determine whether they should adopt the activity code of a holding company or that of a head office. When the Statistical Profile is being compiled based on the Business Register, NACE codes are checked and corrections are made when necessary.

Until recently, the Estonian Financial Supervision and Resolution Authority (EFSRA) did not present their financial reports and was therefore, for the most part, excluded from the compilation of national accounts. In 2015, revised figures were included starting from the creation of the EFSRA in 2002. There are 122 employees in the EFSRA (2021). The main data source is the EFSRA yearbook. Data on wages and salaries and social contributions are derived directly from tax declarations and, therefore, the previous time series included EFSRA figures by default already. The EFSRA does not have any fixed assets; therefore, there is no effect on the calculation of the consumption of fixed capital and gross fixed capital formation.

Chart 3.1 Decision tree in the Business Register for helping enterprises classify themselves (as a holding company or head office)



3.1.2.3. General government sector (S.13)

The general government sector covers all institutional units considered as government non-market producer units. In Estonia, the general government sector is divided into 17 activities (SUT framework) and three sub-sectors: central government (S.1311), local government (S.1313), and social security funds (S.1314).

The central government sub-sector (S.1311) includes:

- 1) S.13111 State budgetary units (Parliament, President of the Republic of Estonia, National Audit Office of Estonia, the Office of the Chancellor of Justice, Supreme Court, Government Office of Estonia, county governments, ministries, departments, etc.);
- 2) S.13112 Public-legal units (6 universities, Estonian Public Broadcasting, National Opera, National Library, Academy of Sciences, Cultural Endowment of Estonia, Estonian Defence League, National Institute of Chemical Physics and Biophysics, etc.);
- 3) S.13113 State foundations (except hospitals);
- 4) S.13114 State hospitals;
- 5) S.13115 State enterprises (except hospitals).

The local government sub-sector (S.1313) covers:

- 1) S.13131 Local governments (city and rural municipality administrations with their subsidiary units);
- 2) S.13132 Local government foundations (except hospitals);
- 3) S.13133 Local government hospitals;

4) S.13134 Local government enterprises (except hospitals).

The sub-sector of social security funds (S.1314) includes:

- 1) S.13141 Estonian Health Insurance Fund;
- 2) S.13142 Estonian Unemployment Insurance Fund.

The total output of general government is valued at total production cost. The accrual principle is followed in the valuation of general government output and intermediate consumption. Intermediate consumption is recorded and valued at purchasers' prices.

The estimation of general government output is based on the detailed data from the general ledgers of units in the Public Sector Financial Statements (PSFS) system. General government units are totally covered. For the general government sector, monthly general ledgers are used. The PSFS system also includes other units within the public sector.

The delimitation of foundations and enterprises is made on the basis of the market/non-market test described below.

Market/non-market test for public sector units

The first test exercise for classifying public sector units according to ESA 2010 rules was carried out in 2011. The testing was done based on the accounting information available in PSFS. Based on the test exercise, the following steps are followed in the classification process:

- 1) quantitative information on the sales receipts and the production costs of public sector units is compiled;
- 2) ratios based on sales receipts and production costs are calculated;
- 3) quantitative checks are carried out based on these ratios;
- 4) additional qualitative checks are carried out for units whose sales receipts received from the government sector account for at least 50% of all receipts.

The test uses data from PSFS and covers all public sector units listed in Annex 2 of the General Rules for State Accounting. Based on Annex 2, a list of public sector units is compiled in the SAAB system¹¹ at Statistics Estonia. In this context, public sector corporations are units that have been assigned sector codes S.11 or S.12. In theory, the sector code of a unit in the SAAB system should be the same as the sector code for the same unit in the SBR. In practice, there might be differences between the two systems if the changes made in SAAB have not yet been implemented in the SBR.

Steps 3 and 4 of the classification process cover at least a three-year period. Therefore, if an exceptionally high or low ratio is presented only in one or two random years, the unit is not yet reclassified.

Testing is carried out based on the rules set out in ESA 2010 paragraphs 20.30–20.31. Based on these paragraphs, the ratio of sales receipts and production costs used in the market/non-market test is calculated as follows:

$$\text{Sales receipts} / \text{Production costs}$$

where

¹¹ The SAAB system is a database solution developed at Statistics Estonia and used for managing and coding PSFS data according to ESA 2010 rules.

Sales receipts = Market production P.11 + Payments for non-market output P.131 + Subsidies on products D.31

Production costs = Compensation of employees D.1 + Intermediate consumption P.2 + Other taxes on production D.29PAY + Consumption of fixed capital P.51C + Net interest charge (D.41PAY-D.41REC)¹²

Own account production is not included in the sales receipts and production costs.

It should be noted that there are certain units which are classified to the government sector based solely on the nature of their activities without the market/non-market test. The main examples are public sector hospitals and social care facilities. Previous analyses carried out for those units have proven that they are created directly to carry out public policies and are therefore considered to be government sector units even in some rare cases where receipts from the private sector are slightly higher than receipts from the government sector.

As a result of changes made in ESA 2010 in the classification rules for non-market non-profit institutions (NPIs) controlled by the government (paragraphs 20.13–20.16), some smaller NPIs have been reclassified from the NPISH sector to the general government sector.

In the context of the Eurostat Guidance Note on Central Stockholding Entities, Statistics Estonia analysed the classification of the Estonian Oil Stockpiling Agency (OSPA) and decided to reclassify the unit into the general government sector due to the fact that the unit is 100% owned by the Ministry of Economic Affairs and Communications and is therefore controlled by sector S.13.

In addition, under ESA 2010 classification rules, some government-controlled units are reclassified from sector S.12 into the general government sector:

- Guarantee Fund, which does not act fully independently and mainly implements government policy;
- AS Smart Cap due to its nature of an ancillary unit.

Step 1. Quantitative information

PSFS data are used to compile quantitative information. In PSFS, six-digit account codes are used. The account codes are grouped into classes, sets and groups based on the first two, three or four digits of the code.

Sales receipts

The following accounts are included in the calculation of sales receipts:

- account class 32 “Sale of goods and services” is set to equal market production P.11 for test purposes;
- account class 35 “Grants received”;
- transactions which represent subsidies on products, received by public sector units; this type of revenue has to be always cross-checked against government sector expenditures to decide whether the subsidy received is on products or production;

¹² Starting from 2015, based on the suggestion from Eurostat, in the cases where the net interest charge is negative, it is replaced with zero.

- transactions which represent revenues which are recorded as grants in state accounting but which are considered to be the acquisition of services by their nature in government sector financial statistics; such transactions are symmetrically treated as the sale of services or P.11 for the units providing the services.

According to the equation, market production and payments for non-market output should be included among sales receipts. For practical reasons, the two transactions could not be distinguished in PSFS data. Therefore, the assumption is made that all revenues of account class 32 are non-market production (P.131) and payments for market production (P.11) are equal to zero.

Production costs

Expenditures from the following accounts, which are corrected with VAT expenditure recorded separately under the account 601000, are included in the calculation of production costs:

- account class 50 "Labour costs", all accounts treated as transaction D.1;
- additionally, account set 507 "Capitalisation of staff costs to the own produced fixed assets" is also included in the calculation of production costs, which according to the account rules decreases staff costs. The reason is that, according to the ESA 2010 market/non-market test rules, own-account production should be excluded from production costs;
- account class 55 "Managing costs", all accounts treated as transaction P.2;
- account group 6010 "Costs on taxes, state fees and levies and fines", all accounts treated as transactions P.2 or D.29;
- account class 65 "Financial income and expenses", all accounts treated as transactions D.41 or P.2 are included;
- account sets 154 "Investment property", 155 "Tangible fixed assets" and 156 "Intangible fixed assets", all transactions with the cash-flow code "Depreciation and markdown". These figures are used as estimates of transaction P.51C, because (a) in national accounts, the consumption of fixed capital is calculated only for each institutional sector, not separately for units; and (b) depreciation cost in accounting is considered to be a close approximation.

Step 2. Ratios

Ratios that are used to distinguish between market and non-market producers are calculated based on the data described in the previous section. In some cases, ratios are not sufficient and an additional qualitative analysis is required.

Based on the data described above, the following indicators are calculated:

- Total sales receipts of the unit:

Sales receipts = P.11 + D.31;

- Sales receipts of the unit, received outside the government sector:

Sales receipts, excl. S.13 = P.11 revenues (where the counterpart is not S.13) + D.31;

- Production costs of the unit:

Production costs = D.1 + P.2 + D.29 + P.51C + D.41net;

Based on these indicators, the following ratios are calculated for each unit:

Ratio 1 = Sales receipts / Production costs;

Ratio 2 = Sales receipts, excl. S.13 / Production costs;

Ratio 3 = Sales receipts, excl. S.13 / Sales receipts.

Step 3. Preliminary quantitative check

The preliminary quantitative check consists of two parts:

- 1) Checking ratio 2: if this is higher than 0.5, the unit is considered to be a market producer. The reason is that even if the goods or services are sold to the government at economically insignificant prices, the unit receives a sufficient amount from the private sector in order to fulfil the market test criteria. If necessary, a case-by-case analysis may be performed to ensure that the unit also fulfils other relevant criteria to be considered a market producer.
- 2) For units whose ratio 2 is equal to or below 0.5, ratio 1 is checked:
 - a) If ratio 1 is equal to or less than 0.5, the unit is classified as a non-market producer, since it is impossible for it to fulfil the 50% criterion.
 - b) If ratio 1 is higher than 0.5, an additional qualitative analysis is carried out for the unit.

The analysis is carried out based on a minimum of 3 years' data. In order to make a decision based on ratios, the movements in several years are taken into account. Each ratio is considered to be equal to or less than 0.5 if:

- i. the ratio has been equal to or less than 0.5 during three consecutive years in the last five years;
- or
- ii. if the ratio has been constantly fluctuating and has stayed below or above the 0.5 mark no longer than two consecutive years.

In cases where a new enterprise has been created and it has been economically active for less than three years, the presumption is made that the unit is a market producer. Exceptions include cases where Statistics Estonia has carried out a pre-assessment of sector classification for the unit and has reached the conclusion that there is no possibility for the unit to become a market producer (for instance, the new unit provides auxiliary services and the government sector will be its only client).

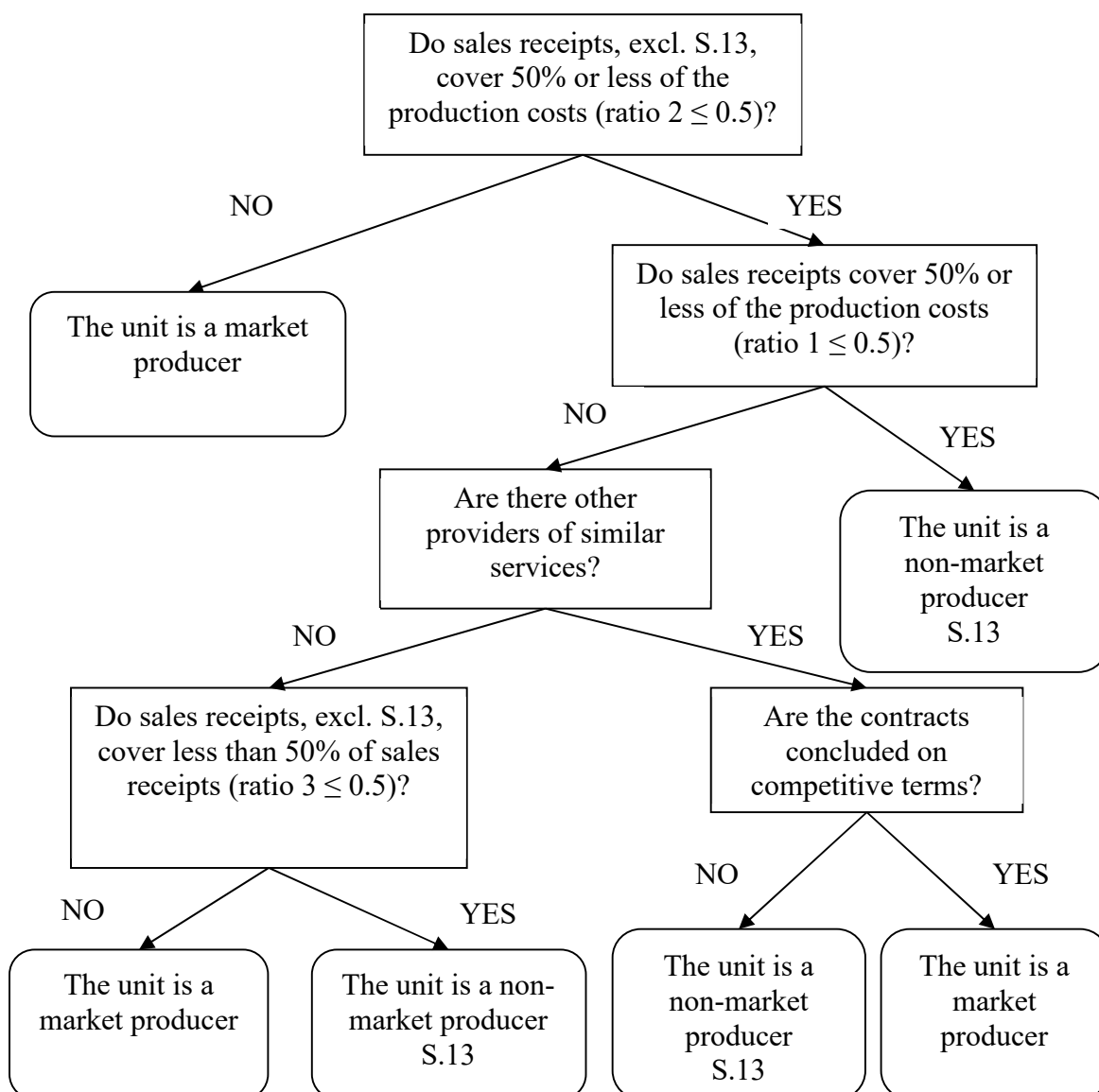
Chart 3.1 (p. 55) presents the decision tree with an overview of quantitative and qualitative checks.

Step 4. Qualitative analysis

A qualitative analysis is carried out for units whose ratio 2 is equal to or less than 0.5 but whose ratio 1 is higher than 0.5. In the case of such units, it is clear that if they were not selling goods or services to the government sector, they would not fulfil the criterion of being a market producer. Therefore, it is necessary to assess whether the receipts from the government sector can be treated as market production according to the criteria established in paragraphs 20.24–20.28 of the ESA 2010 methodology.

The decision tree shown in Chart 3.2 presents the conditions for treating sale to the government sector as market sale. Competition between service providers on the same terms generally means that a public procurement contract is concluded based on market conditions and government sector payments are associated only with the amount of services provided.

Chart 3.2. Decision tree for classifying public sector units as market or non-market producers



The decision tree shown in Chart 3.2. does not completely correspond to the conditions set out in Table 3.5, but the result is nevertheless close enough. While carrying out qualitative testing, the first step is to establish whether there is competition or, in other words, whether there are other providers of similar services.

If there are no similar service providers, Case 3 will apply. Therefore, it is necessary to check whether sale receipts from other sectors account for more than half of the total receipts:

- a. If yes, the unit is a market producer.
- b. If no, then the unit is a non-market producer (this also falls under Case 1, because if there is no competition and the only buyer is the government sector, then the unit is definitely a non-market producer).

Table 3.5 Cases where sale to the government sector is market production

Is the unit the only service provider to the government sector? Clients	Only service provider in the public sector	One of several service providers in the public sector
Only government	<u>Case 1:</u> Competing with private producer(s)	<u>Case 2:</u> Competing on similar conditions with other providers
Government and others	<u>Case 3:</u> Sales receipts from other sectors make up over 50% of total receipts or while selling services to the government sector there is competition with private producer(s)	<u>Case 4:</u> Competing under similar conditions with other providers

If there are other providers of similar services – Cases 1, 2 and 4 will apply, where it is necessary to check whether the contracts are concluded under the same conditions as with other service providers. For Case 1, it is necessary to also check whether the other service providers are from the private sector:

- a. If the conditions of the contract are similar to those signed with other service providers, then the contract is concluded based on the rules of market competition and the unit is a market producer.
- b. If the conditions are not similar to those that apply to other service providers, then there is no competition and the unit is a non-market producer.

3.1.2.4. Households sector (S.14)

In national accounts, the households sector covers both market producers and producers for own final use. 61 market activities, 2 illegal activities and 5 activities for own final use have been specified under this sector. The full details of activity specifications for households used in the production approach are given in Section 9.1.1.

Unincorporated enterprises (i.e. sole proprietors) owned by households (also referred to by its Estonian acronym, FIE), which is one of the legal forms of business activity in Estonia, are considered as market producers in national accounts. Starting from 1 January 2010, all sole proprietors are obliged to get registered in the Business Register before they start their activity. Sole proprietors with an annual taxable turnover of more than 40,000 euros have to register as a VAT payer with the Tax and Customs Board. If a FIE operates in an area of activity subject

to special requirements, he or she will have to apply for an activity licence. If he or she hires employees, he or she will have to register them with the Tax and Customs Board. The advantages of operating as a FIE include the following: no minimum capital requirement, simple registration, no requirement to have articles of association; however, sole proprietors have unlimited personal liability for debts incurred in business.

According to the Estonian Accounting Act, the accounting system for sole proprietors is quite simplified. They are not required to compile the full set of business accounts, i.e. the balance sheet. All sole proprietors are obliged to submit annual tax declarations on business income (Form E) to the Tax and Customs Board within four months after end of the year. Sole proprietors are required to submit an income tax return even if they did not receive any business income or if the income was smaller than the basic exemption. Business expenses and business income are taken into account in the year when the income was received, or the expenses were incurred. Form E of the income tax return must be completed using cash-based accounting, i.e. if a sole proprietor maintains his or her accounts on the accrual basis, he or she is required to adjust it to cash-based accounting.

For unincorporated enterprises, the main data source is the administrative data of the Tax and Customs Board. The aggregated data for sole proprietors, broken down by kind of activity at NACE 2-digit level, based on tax declarations are received annually from 2001. Information from the tax authority is the main source for making estimates for unincorporated units in all activities, except agriculture. In 2021, there were approximately 19,820 active declarations submitted by sole proprietors, of which 4,789 declarations were in the agriculture activity. In spite of the fact that the total number of sole proprietors is quite large, the share of their revenues in total business revenues (incl. enterprises) is very small. In 2021, the share amounted to less than 0.5%. More information about tax declarations on the business income of sole proprietors is provided in Chapter 10. The estimation methodology for unincorporated units is described in Section 3.19 and for agriculture (farms) in Section 3.7.

Producer units that are not obliged to register because they have no market output (type N3 of non-exhaustiveness) are treated as other non-market household producers for own final use. The following activities for own final use are defined: production, storage and processing of agricultural products by households (part of activity H.A.01), production of fuel wood (activity O.A.02), fishing (O.A.03), own-account construction and major repair of dwellings (O.F.41), housing services produced by owner-occupiers (O.L.68202) and activities of households as employers of domestic personnel (O.T.97_98).

3.1.2.5. NPISH sector (S.15)

In Estonia, NPIs are classified into different institutional sectors. A part of non-profit institutions that provide educational and other services with a large share of market output are classified into the non-financial corporations sector using the 50% criterion. Business and employers' organisations, except agricultural associations, are distinguished from NPISH and included in the non-financial corporations sector (activity M.S.94). Agricultural associations and unions that serve farmers are reclassified into the households sector (activity H.S.94). NPIs are classified into the financial corporations sector if they are serving financial corporations or they are principally engaged in financial intermediation and/or in auxiliary financial activities. By the end of 2021, there were 16 non-profit institutions serving businesses in the financial sector, which were classified in the financial auxiliaries sub-sector. The units that are managed, controlled, funded by government and received more than 50% of financing for operating expenditures from the government in two consecutive years and fulfil functions of the

government are classified into the general government sector. Most of the non-profit institutions are non-market producers classified to the NPISH sector.

The annual statistical survey “Non-profit organisations” is conducted especially for national accounts purposes. Non-profit institutions with 10 and more persons employed are covered totally. The data for organisations with fewer than 10 persons employed are collected by a sample survey. Political parties are covered totally. Starting from 2021, the yearly collection of questionnaires from non-profit institutions was terminated and the survey is conducted after every four or five years. At the same time, the modelling of indicators based on annual reports of NPIs received from the Business Register was introduced. As some indicators which were previously asked in the statistical questionnaire are missing in annual reports, the structures of income and expenditures calculated according to the questionnaire data are used for modelling. The survey methodology is described in more detail in Section 10.1.5.

3.1.2.6. Underground and illegal producers

Producer units deliberately not registering – underground and illegal producers (types N1 and N2 of non-exhaustiveness) – are explicitly covered in national accounts. The estimation of non-registered underground economy (N1) refers to the production of intentionally non-registered productive units. This type of non-exhaustiveness adjustment is based on the employment method. The number of persons working under a verbal contract is considered as the number of non-registered workers. Starting from 2015, the estimated number of people who stay and work illegally in Estonia is added. This type of adjustment is related to the hidden activities of producers in the non-financial corporations and households sectors. The estimation methodology for type N1 is described in Section 7.1.3.1.

The calculations of illegal activities (N2) cover prostitution, the production and distribution of drugs, the smuggling of tobacco, alcohol, motor fuel and medicaments. The data sources and estimation methods are described in the following subsections: prostitution in Section 0production and distribution of drugs in Section 7.1.3.2.2; smuggling in Section 7.1.3.2.3.

3.1.2.7. Special Purpose Entities

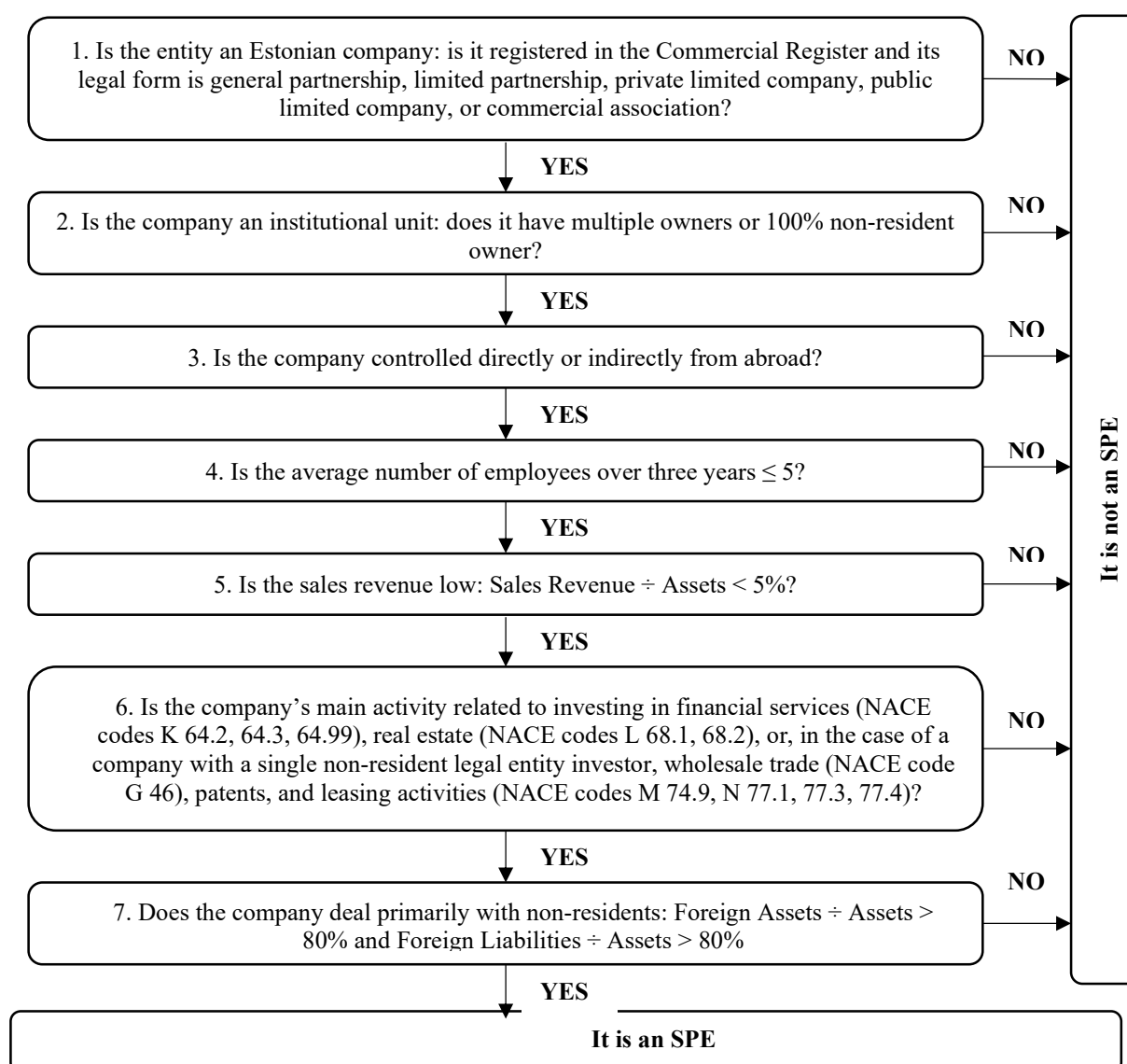
Eesti Pank cooperates with the national statistical institution (NSI) to identify SPEs, based on a memorandum of understanding between the two institutions.

The NSI provides information on the ultimate investing countries (UICs) assigned to the units. The central bank determines the list of SPEs and shares the results with the NSI to ensure that the same entities are consistently flagged as SPEs.

The methodology for defining Special Purpose Entities (SPEs) was developed in 2022. It is based on the IMF’s “Special Purpose Entities: Guidelines for a Data Template” (October 2020) and the ECB’s “GovCX154a - GenCX031 - 2022 - wp - Draft Guideline - Amendment of Guideline ECB_2011_23 on the statistical reporting requirements of the ECB in the field of external statistics” (27 April 2022).

After evaluating the availability of data, the time and cost required to collect the data, and the expected benefits, the decision tree illustrated in Chart 3.3 was introduced.

Chart 3.3 Decision tree currently used to identify Estonian Special Purpose Entities (SPEs)



The methodology was first applied to data from the year 2019. According to this methodology, there were 29 SPEs in Estonia in 2021.

3.2.2.8. Statistical units

The enterprise as a legal unit is a type of statistical unit used in the production approach to the GDP. The SBS survey collects information on both turnover and input costs from legal units, see Section 3.1.1. for more details.

3.2.2.9. Requirements relating to the quality of the statistical sources

The main data sources for national accounts are the statistical surveys and administrative data covering all activities on a regular annual basis. In the statistical surveys, the enterprises are completely enumerated or sampled. For the activities surveyed, coverage in terms of size classes is described in more detail in Chapter 10. Periodic surveys (e.g. HBS) are carried out multi-yearly. The Population and Housing Census (PHC) is conducted regularly every ten years.

Detailed surveys on expenses of materials, supplies, fuels and services of enterprises (Module E of EKOMAR) are conducted to complement compulsory SBS inquiries. However, additional information can be obtained, if absolutely necessary, by increasing details on existing questionnaires. Therefore, data are collected by Module E of EKOMAR with a five-year interval: previous data collection took place for the reference year 2018. In 2026, data for 2025 will be collected. The aim is to obtain data according to the new version of NACE.

Administrative data are obtained on a regular basis in accordance with interinstitutional agreements in order to be able to compile timely and good-quality estimates.

3.2. Borderline cases

This section provides information on how to ensure that the following borderline cases are included in or excluded from production and intermediate consumption.

3.2.1 Production boundary

The calculation of production includes the following boundary cases:

a) Own-account gross fixed capital formation (GFCF), including, in particular:

i. Mineral exploration

The output of own-account mineral exploration created by mining and quarrying activities is estimated and included in the GFCF. The data sources and estimation methods are described in Section 5.10.3.16.

ii. Tangible fixed assets, including machine tools produced by engineering enterprises

The output of own-account produced tangible fixed assets is part of the gross fixed capital formation. Estimates for own-account produced tangible fixed assets by non-financial corporations (S.11) include two products: machinery and equipment made for their own use (CPA product 1.C.2899) and own-account construction and major repair of buildings and structures (1.F.4199). Estimates for households as market producers (S.14) also include own-account construction and major repair of buildings and structures (1.F.4199).

iii. Construction and capital repair of dwellings by households

The output of own-account construction and repairs of dwellings (CPA product 1.F.4199) by households is estimated and recorded under the GFCF. The data sources and estimation methods are described in Section 7.1.3.3..

iv. Entertainment, literary and artistic originals

Estimates for own-account produced entertainment, literary and artistic originals include TV and radio stock programmes, i.e. documentaries, drama, music, arts, history and education protected by copyright (CPA product 1.J.599). Estimates of originals are in line with the recommendations from the GNP Committee on Entertainment, Literary and Artistic Originals. The data sources and estimation methods are described in Section 5.10.3.18. Licence fees for

the use of originals are treated as services and recorded as exports and imports of services, intermediate consumption and output in the SUT.

v. Software

The output of own-account produced software (1.J.6299) is estimated and included in the GFCF. The data sources and estimation methods are described in Section 5.10.3.17.

vi. Research and development

The output of own-account research and development (1.M.7299) is estimated and included in the GFCF as outlined in the manual on research and development. The main source of data is the Frascati Survey that provides annual estimates across sectors and economic activities. For more information, see Section 5.10.3.16.

b) Production, storage and processing of agricultural products for own-account by households

HFCE estimates about agricultural products for own-account are obtained from the production approach calculations for the households sector. The same estimates are included in the production and in the expenditure approach. Estimates on households' own production are made for agricultural, fishing and forestry products. For more information, see Section 3.7.1.

c) Dwelling services produced by owner-occupiers

Estimates for dwelling services produced by owner-occupiers are included in the GDP. These calculations are based on the Population and Housing Census data from 2021. For more information, see Section 0.

d) Household services produced by employing paid domestic staff

The main data source for calculating household services produced by employing paid domestic staff is the Household Budget Survey (HBS). Since the HBS was not conducted in 2021, HBS data obtained using regression models were used instead. The same estimates are included in the production and in the expenditure approach. For more information, see Section 3.27.

e) Volunteer activities that result in goods

In Estonia, volunteers are mainly involved in social care organisations, churches and congregations, other membership organisations (for example, community development), environmental protection organisations, recreational, cultural and sporting organisations and in education. Most of these organisations provide services, and voluntary work is mainly connected to providing services or collecting money for the organisation. For example, the volunteers help the elderly, participate in youth work, help to organise different actions as ancillary workers or as experts, etc. So, as already mentioned, most of the output received from voluntary work could be expressed in services. The share of producing goods is marginal. Sometimes, non-profit institutions issue different information materials, booklets, books etc. and sell them, but it is complicated to distinguish how much of this work is done for pay and how much of it is unpaid work, i.e. done voluntarily.

Statistics Estonia started to collect the data concerning voluntary work in 2005 (reference year 2004) because, on the one hand, it was the desire of non-profit organisations themselves and,

on the other hand, there is interest from the government side. As Statistics Estonia does not compile satellite accounts for non-profit institutions, the contribution of voluntary work to the GDP has not yet been assessed.

f) Products used for payments in kind

Estimates for payments in kind are based on three sources: administrative data of the Tax and Customs Board (Form Fringe Benefits), the Estonian Social Survey (ESS) and the Household Budget Survey (HBS). The Tax and Customs Board data are the starting point in the calculation of income in kind of the corporations and NPISH sectors. PSFS are used for general government sector calculations. The HBS and the ESS are additional sources used for comparisons and further calculations. For more information, see Section 4.6.1.

Products bartered

Production of goods and services for the market, whether for sale or barter, is included in production.

g) Products supplied by one local kind-of-activity unit (KAU) to another within the same institutional unit to be used as intermediate inputs or for final uses

Goods and services received from another local KAU within the same enterprise are not taken into account, as these transactions are considered not important for Estonia.

For the purposes of regional GDP, when calculating the value added of enterprises operating in multiple locations, the aim is to attribute it to the region where the unit actually operates, rather than just its place of registration. For this purpose, information on local units is used.

The legal unit (LU) and enterprise (ENT) are the statistical units used in Estonian national accounts.

Until reference year 2020, the SBS survey contained a sub-questionnaire about local kind-of-activity units providing information on the number of persons employed, hours worked, wages and social contributions of local KAUs. The , the number of enterprises that submitted the sub-questionnaire in was 0.4% of the total number of enterprises.

Starting from the reference year 2021, a new methodology is used to obtain data of local units. Local units have been created using the employment register (Töötamise register (TÖR) in Estonian) and income and social tax declarations (TSD) data. This became possible with the implementation of TÖR. TÖR is a register that collects information on employment and is kept by the Estonian Tax and Customs Board (ETCB). All employers have the obligation to register employment. Among other things, the employee's personal identification code, the date of commencement of employment and the address of the workplace must be entered in the employment register.

TÖR was used to find local units (LU), their kind of activity and employment. Local units (LU) were identified based on workplace address information, and local unit NACE codes were assigned using a specially developed model based on the occupational data of people working in the local unit.

Wage data for employees of local units are obtained from income and social tax declarations (TSD). For this purpose, the TÖR and TSD datasets were linked using the employees' personal identification codes.

- h) Products added to the inventories of finished goods and work-in-progress (including natural growth of animal and vegetable products, standing timber and uncompleted structures for which the buyer is unknown)

Standing timber and stocks of fish or animals reared for purposes of food are treated as inventories of work-in-progress during the process and transformed into inventories of finished products when the process is completed. Inventories of work-in-progress are calculated according to data from the survey on economic indicators of agricultural, forestry and fishing enterprises.

3.2.2 Inclusions in intermediate consumption

Intermediate consumption includes the following borderline cases:

- a) Costs of using rented fixed assets (mainly operating leasing)

Intermediate consumption of non-financial corporations includes rent for the use of fixed assets, whether equipment, cars or buildings, taken on operating lease from other companies. An conceptual adjustment to intermediate consumption is made for operating lease by allocating a part of it to the GFCF, assuming it is financial lease. For more information, see Section 3.4.i).

In the financial corporations sector, operational leasing is recorded under operating costs in the income statement and is therefore counted in national accounts as intermediate consumption. Financial leasing is recorded under fixed assets in the balance sheet and is therefore counted in national accounts as gross fixed capital formation.

For the general government sector, the treatment of operational leasing is covered in the Public Sector Financial Statements. Financial leasing is recorded in the balance sheet under fixed assets and is therefore counted in national accounts as gross fixed capital formation. Operational leasing is recorded under operating costs and as intermediate consumption, except the accounts "Rental of land vehicles" with counterpart sectors S.1102 or S.12, since it is assumed that this is financial leasing.

For sole proprietors, information about income and costs is received from the administrative data of the Tax and Customs Board. The costs of sole proprietors also cover the costs for the use of fixed assets leased under operating lease.

- b) Inexpensive tools used for common operations and small devices such as those listed in the ESA 2010 methodology under §3.89 (f)(1)

For non-financial corporations, all expenditure on such small durables is recorded as intermediate consumption. In the financial corporations sector, inexpensive tools used for common operations are recorded under operating costs in the income statement and are therefore counted in national accounts as intermediate consumption.

For the general government sector, the General Rules for State Accounting consider commodities above the threshold of 5,000 euros (excluding VAT) as fixed assets until 31 December 2022. No adjustments are made for intermediate consumption.

For sole proprietors, the minimum threshold value is not fixed and no information is available which threshold they apply in practice.

c) Subscriptions, contributions or dues paid to non-profit business associations

The treatment of subscriptions, contributions or dues paid to non-profit business associations is in line with ESA 2010. These services are recorded as intermediate consumption by the members of the associations in S.11 and S.14 (for instance, farmers). In the financial corporations sector, subscriptions, contributions or dues paid to non-profit business associations are recorded under operating costs in the income statement and are therefore counted in national accounts as intermediate consumption.

d) Goods and services received from another local KAU of the same institutional unit that comply with the definition of intermediate consumption

See the explanation provided in Section 0.h for more detailed information.

e) Non-life insurance service charges (payments for life insurance should be excluded)

For the non-financial corporations, financial corporations, general government and NPISH sectors, the costs of non-life insurance are available from surveys and administrative sources. Firstly, the value of insurance premiums paid is excluded from intermediate consumption, and then non-life insurance service charges are included (conceptual adjustment). Data on service charges of non-life insurance by institutional sector are derived from financial sector estimates. The sum for insurance service charges is proportionally allocated to the activities under expenditures on insurance. In the case of the households sector, non-life insurance service charges are estimated separately for households as market producers, dwelling services produced by owner-occupiers and HFCE. For more information, see Section 3.4.f.

Payments for life insurance are not included in intermediate consumption.

f) FISIM purchased by resident producers

For all institutional sectors, purchased FISIM is allocated to intermediate consumption, see Section 3.17.

FISIM on loans of households as owners of unincorporated enterprises is allocated to intermediate consumption of various activities of S.14. FISIM on dwelling loans is allocated to intermediate consumption of the rental of own residential buildings (imputed rent) activity. See also Section 3.4.h).

g) Research and development (R&D) services acquired to be used solely in the creation of further products of research and development (all other research and development should be treated as GFCF)

Under ESA 2010, research and development used as input for activity NACE 72 (to be considered as sub-contracting) is treated as intermediate consumption and is excluded from the capitalisation of research and development. Therefore, the respective data received from business statistics are subtracted from the Frascati estimates.

h) Goods and services used as inputs into ancillary activities

When ancillary services are produced in-house, all the inputs consumed by an ancillary activity (materials, services, labour, consumption of fixed capital, etc.) are treated as inputs into the principal or secondary activity that it supports.

i) Expenditure of employees, reimbursed by the employer, on items necessary for the employer's production

In all sectors, the expenditure of employees, reimbursed by the employer, on items necessary for the employer's production is recorded as intermediate consumption.

j) Expenditure by households on goods and services used as intermediate inputs into own-account production of energy.

The household production of electricity for own final use is not included in national accounts yet (see Section 3.3.1)

3.2.3 Exclusions from intermediate consumption

Intermediate consumption excludes the following borderline cases:

a) The following items are treated as gross capital formation:

Valuables (P.53) are treated as gross capital formation. For more information, see Section 5.2.

Mineral exploration is treated as GFCF. For more information, see Section 5.10.3.16.

Major repairs and improvements (renovation, reconstruction or enlargement) are treated as GFCF. According to the Estonian Accounting Act, expenses which substantially extend the working life, increase the performance and capacity of an asset, increase the quality of production or decrease the expenses of production, should be treated as expenses on reconstruction and recorded as GFCF. This statement is generally in line with NA requirements and no adjustment needs to be made in business accounts.

Computer software purchased on the market is treated as GFCF. For non-financial corporations, data are collected by the SBS survey Module H "Investments" under "Software". In addition, information from the SBS Module V "Breakdown of turnover by products" of enterprises engaged in activities under NACE 62 is used to estimate gross fixed capital formation in software from the supply side.

R&D is treated as GFCF (with the exception of the R&D acquired to be used solely in the creation of further products of R&D). The Frascati Survey provides data on R&D to be capitalised. Intermediate consumption estimates based on business statistics are adjusted accordingly.

Under ESA 2010, purchases of durable weapons systems by military authorities in the general government sector are considered as gross fixed capital formation.

- b) Expenditure to be treated as the purchase of non-produced assets, e.g. long-term contracts, leases and licenses

Non-produced assets acquired under long-term contracts, leases and licenses (AN.22) are not included in intermediate consumption.

- c) Expenditure incurred by employers (to be treated as wages and salaries in kind)

For non-financial corporations and financial corporations, expenditures on goods and services provided to employees free of charge are reallocated from intermediate consumption to the compensation of employees (income in kind adjustment). For the general government sector, the treatment of wages and salaries in kind is covered in the Public Sector Financial Statements. Wages and salaries in kind are recorded under accounts related to fringe benefits. For the households sector, the treatment of wages and salaries in kind is in line with ESA 2010. For the NPISH sector, wages and salaries in kind that include fringe benefits are excluded from intermediate consumption.

- d) Use by market or own-account producer units of collective services provided by government units (to be treated as collective consumption expenditure by government)

The costs of collective services provided free of charge by government units are not included in intermediate consumption of market and own-account producers and are treated as collective consumption of the government sector.

- e) Goods and services produced and consumed within the same accounting period and within the same local KAU (to be also excluded from output)

The output of goods and services produced and used as intermediate consumption within the same local KAU is not recorded.

- f) Payments for government licenses and fees that are to be treated as other taxes on production

Government licenses are counted as taxes in the sum that they are reported by the Tax and Customs Board in their detailed monthly report. The government licences treated as other taxes on production include: state fee on activities according to the Gambling Act, state fee on activities according to the Medicinal Products Act, state fee on state activity licences and permits. The reason for such treatment is that these fees satisfy the conditions for taxes: mainly because they are unrequited or the “benefit” is of small value in relation to the payment. Car registration fees are treated as taxes on products, and the rest of the payments for government licences are treated as intermediate consumption.

- g) Payments for licences for using natural resources (e.g. land) that are to be treated as rents

For the non-financial corporations sector, payments for the temporary use of natural resources are recorded as rents, i.e. as payments of property income. The value of rent on land (60.0 million euros in 2021) is excluded from the estimates of intermediate consumption and included

in gross value added under the operating surplus component. Adjustments made in 2021 in intermediate consumption for rents on land are presented by NACE Section in Table 3.6.

Table 3.6 Adjustments in intermediate consumption (IC) for rents on land by NACE activity, 2021
(million euros)

NACE Section	A	B	C	D	E	F	G	H	I	J	L	M	N	P	Q	R
Adjustments	24.2	0.5	1.8	0.3	0.2	0.5	3.8	19.8	0.2	3.2	4.8	0.4	0.1	0.0	0.1	0.2
as % of IC	1.5	0.2	0.0	0.0	0.0	0.0	0.1	0.5	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0

Such rents are not applicable to the financial corporations, NPISH and households sectors. For the general government sector, fees for the use of natural resources are accounted for under a separate account and are also excluded from intermediate consumption.

h) Decommissioning for large capital assets

Decommissioning costs are excluded from intermediate consumption and are treated as GFCF. For more information, see Section 5.2.2.

3.2.4 Recording of daily allowances

For all institutional sectors, narrow-type daily allowances received by employees on business trips are fully recorded as wages and salaries and other daily allowances are treated as intermediate consumption.

For the non-financial corporations sector (S.11), per diem figures are contained in the annual statistical report SBS as a total: “Daily allowance, travel insurance, accommodation expenses, travel expenses within the limits permitted by law”. The figures are divided into narrow per diem and travel and accommodation costs using the coefficients developed in a special survey for the input-output tables by inputs. These coefficients vary by activities and are regularly adjusted, taking into account information regarding the daily allowance rates announced by the government, business trips from balance of payments and changes in the price indices.

Financial sector (S.12) per diem data are captured from the “Financial statistics of financial service activities and activities auxiliary to financial services” questionnaire. The figures are divided between narrow-type daily allowance, travel expenses and accommodation expenses.

In the general government sector (S.13), the main data sources are based on the information system of Public Sector Financial Statements (PSFS). All general government units are covered in the PSFS system. Broad-type per diems are distinguishable between hotel costs, flight costs and daily allowances as well as insurance costs. More detailed transactions that can be distinguished in PSFS:

Account number	Account name	Transaction
5503	Travel expenses	
55030	Short-term travel expenses	
550301	Accommodation expenses	P.2
550302	Travel expenses	P.2
550303	Insurance expenses	P.2*
550304	Daily allowance expenses	D.111
550309	Other travel expenses	P.2
55031	Long-term travel expenses	
550311	Accommodation expenses	P.2
550312	Travel expenses	P.2
550313	Insurance expenses	P.2*
550314	Daily allowance expenses	D.111
550319	Other travel expenses	P.2
5504	Training expenses	
550410	Accommodation expenses	P.2
550420	Travel expenses	P.2
550430	Insurance expenses	P.2*
550440	Daily allowance expenses	D.111
550480	Other training expenses	P.2

* except insurance premiums (D.71)

For the households sector (S.14), broad-type per diem is estimated by using the per diem from the previous year, multiplied by the households sector P.1 annual growth rate. Thus, compilation is done on activity level. Broad-type per diems are distinguishable between hotel costs, flight costs and narrow-type daily allowances as well as insurance costs.

Data for non-profit institutions (S.15) came from the annual statistical survey “Non-profit institutions”, providing per diem as a total of “Daily allowance, travel insurance, accommodation expenses, travel expenses within the limits permitted by law”. The broad-type per diem is divided between narrow-type daily allowance, travel expenses and accommodation expenses.

The split of daily allowances into the narrow type:

Sector	Narrow per diem	% of broad per diem
S.11	122.1	54.7
S.12	1.6	15.1
S.13	8.5	20.7
S.14	1.7	44.5
S.15	5.7	33.7

3.2.5 Taxes and subsidies on products

For borderline cases concerning taxes and subsidies on products, see the description in Sections 3.28 and 3.29.

3.3. Valuation

3.3.1. Valuation of output

Market output is valued at basic prices in accordance with the ESA 2010 definition. The value of output of non-financial corporations is calculated from Structural Business Statistics, the production of which closely follows accounting standards. In business accounts, net turnover is valued at market prices, excluding value added tax, excise duties paid by producers and traders, and subsidies received from public authorities or the institutions of the European Union. Stocks of finished products and work-in-progress are recorded in company accounts and the SBS at production costs. In business accounts, own-account produced assets cover production during the accounting period, valued on the basis of the costs of inputs.

In national accounts, output value at basic prices is calculated as net turnover plus subsidies on products minus changes in work-in-progress and finished goods plus capitalised own-account produced tangible and intangible assets.

The subsidies received from public authorities or the institutions of the European Union are not included in the value of net turnover in the SBS survey; this information is collected as a separate variable by the SBS survey. SBS data on subsidies are checked against the information from government accounts and transport statistics to ensure consistency with these, and the SBS data are adjusted if necessary.

Inventories of finished goods and work-in-progress are adjusted to achieve the basic price-based valuation. Two kinds of adjustments are made in the inventories data provided by source statistics: firstly, for the inventories of finished goods and work-in-progress, a mark-up adjustment for net operating surplus is made to achieve the basic prices. The mark-up for net operating surplus is calculated on the basis of the SBS survey by NACE Rev. 2 activities at the 2-digit level. Secondly, holding gains are eliminated from changes in inventories of finished goods, work-in-progress and goods for resale. For more information about holding gains, see Section 5.11.

Net growth of standing timber is valued at stumpage prices. For more information, see Section 5.11.

No adjustments are made to output and intermediate consumption due to valuation of intra-group transactions within MNEs (transfer pricing).

Output for own final use is valued at production costs plus a mark-up for net operating surplus or mixed income (except for non-market producers). The groups of own-account products by market producers include the following: own-account mineral exploration (product 1.B.0999), equipment and machinery made for own capital formation (1.C.2899), own-account construction (1.F.4199), own-account decommissioning costs (1.F.4399), film, TV and radio broadcasting originals (1.J.591 and 1.J.599), own-account produced software (1.J.6299) and own-account production of R&D (1.M.7299).

The household production of electricity for own final use is not yet included in national accounts.

Currently, the methodology for estimating household electricity production is being developed based on the Eurostat document “Methodological Notes – Recording of the Electricity

Production by Households” presented by Andreas Dollt at the GNIG meeting in April 2024. SE is participating in the project “ESA2010 and BPM6 Implementation, Quality Improvement and Implementation of the GNP Verification Cycle”, which focuses on the sub-topic of estimating electricity produced by households for their own use. The project is scheduled for completion by the end of March 2026.

The output of own-account agricultural products, fuel wood, fishing products by households is valued at basic prices. Construction output for own final use by households is valued at production cost plus a mark-up. Own-account production of dwelling services by owner-occupiers is also valued at basic prices.

Some examples of the estimation of the mark-up are described below.

For film originals, the mark-up coefficient for net operating surplus was calculated on the basis of the SBS statistical survey for film production enterprises in activity class 5911 of NACE Rev. 2. The average mark-up coefficient amounted to 1.059 in 2021. For TV and radio originals, the mark-up for net operating surplus was calculated on the basis of the SBS statistical survey for enterprises engaging in motion picture, video and television programme production (NACE 59) and programming and broadcasting activities (NACE 60). The average mark-up coefficient amounted to 1.056 in 2021.

The mark-up coefficient for net operating surplus is calculated as follows:

$$\text{Coefficient} = 1 + \frac{\text{net turnover} + \text{operating subsidies} - \text{expenses}}{\text{net turnover} + \text{operating subsidies}}$$

Own-account research and development is capitalised on the basis of wages and other recurring costs, as identified in the Frascati Survey. The mark-up for market producers is estimated on the basis of operating surplus of non-financial enterprises in NACE 72. The exact magnitude of the mark-up varies yearly.

The total output of a non-market producer (GG and NPISH) is valued at total production cost.

The total output value of the general government is estimated as the sum of intermediate consumption, compensation of employees, consumption of fixed capital and other taxes on production. There are no other subsidies on production for government non-market producers. The market output is estimated on the basis of general government revenue. The data are directly available from the Public Sector Financial Statements.

3.3.2. Time of recording of output (the accrual principle)

The valuation of output is in accordance with the accrual principles of ESA 2010. According to the Estonian accounting standards, enterprises should prepare their business accounts following the accrual basis of accounting. Concerning the general government sector, the Public Sector Financial Statements system provides the data on an accrual basis. The survey of NPIs has to be presented on an accrual basis. As the questionnaire is filled in electronically, the data of annual reports from the Business Register are used for prefilling the questionnaire. In accordance with the Accounting Act, annual reports are compiled on an accrual basis.

Sole proprietors are not obliged to compile their accounts on an accrual basis. A sole proprietor may use either the cash or accrual method of accounting in their business accounting. When choosing the accounting principle, attention should be given to the fact that, in the taxation of business income, the cash basis principle is used (Income Tax Act subsections 36 (1) and (3)). It means that if a sole proprietor keeps accounts on accrual basis, the business income will be adjusted to cash basis for completing Form E of the tax return. Thus, a sole proprietor using the accrual method of accounting is required to use the cash method of accounting for tax purposes. The accounting requirements are provided in the Accounting Act and in the recommendations of the Accounting Standards Board.

3.3.3. Time of recording and valuation of intermediate consumption

The valuation of intermediate consumption is in accordance with the accrual principles of ESA 2010. Products used for intermediate consumption are recorded and valued at the time they enter the production process. The holding gains are eliminated from changes in inventories of materials intended for use as inputs in calculating intermediate consumption. Intermediate consumption is valued at purchasers' prices, excluding deductible VAT, at the time of use. In business accounts, the costs are valued at purchasers' prices excluding deductible VAT, which is consistent with the valuation concept for IC in national accounts.

3.3.4. Time of recording of taxes and subsidies on products

The application of the principle of accrual time of recording to the estimates of taxes and subsidies on products is described in Sections 3.28 and 3.29.

3.4. Transition from private accounting and administrative concepts to national accounting concepts under ESA 2010

The description of the transition from private accounting concepts to ESA 2010 national accounts concepts is provided below. Transition from government accounting to ESA 2010 concepts is described in Section 3.21. For financial corporations, see Section 3.17. For unincorporated enterprises, see Section 3.19. For NPISH, see Section 3.25.

In order to estimate the value of output and intermediate consumption of non-financial corporations according to the requirements of ESA 2010, SE makes a number of adjustments to the sources of business statistics for differences in definitions, valuation, recording treatment and exhaustiveness.

Output

Output value at basic prices in the non-financial corporations sector (based on SBS) is calculated as: net turnover plus subsidies on products minus goods and services for resale minus change in work-in-progress minus change in finished goods plus capitalised own-account produced assets, minus payments to subcontractors for construction work plus payments to subcontractors for construction work in foreign countries.

Subsidies on products (D.319) are added for certain agricultural products, passenger transportation services and energy sector services.

To meet the national accounts concept of output for trade, the trade margin is calculated as the turnover of trading activities minus goods for resale. Commission charges are calculated as turnover from intermediary activities minus services for resale. Estimates are made for the intermediation of package tours, transport tickets, real estate and goods that are not sold through trade channels (electricity, water, heat energy, etc.). Net recording for lotteries and gambling (i.e. the payment of a service charge) is applied. To meet the net valuation concept, the service charge is calculated as the turnover of gambling activities minus the disbursement of gains. Output for units with negative or zero production in the SBS is calculated as the sum of cost price and operating profit markup. See Table 3.7.

Table 3.7 Output according to the business statistics concept

SBS code	SBS item description		Comments
C_010	Net turnover	+	
C_020 part	Operating subsidies	+	Passenger transportation, agriculture, energy D.319
C_100	Goods purchased for resale	-	
C_110	Services purchased for resale	-	
C_120	Real estate purchased for resale	-	
C_260	Payments to subcontractors for construction work	-	For Construction (F)
C_270	Payments to subcontractors for construction work in foreign countries	+	For Construction (F)
I_052_1	Work-in-progress at the end of period	+	I_052_1*mark-up coefficient, NA concept is applied
I_052_2	Work-in-progress at the beginning of period	-	I_052_2*mark-up coefficient, NA concept is applied
I_053_1	Finished goods at the end of period	+	I_053_1*mark-up coefficient, NA concept is applied
I_053_2	Finished goods at the beginning of period	-	I_053_2*mark-up coefficient, NA concept is applied
	Negative or zero production output	+	(C_210_U,0 + C_270_U + C_320 + C_330_U + H_060_29 + H_060_45 + C_340 + C_345 + C_350 + C_400 + C_410 + C_420 + C_460 + C_515 + C_530 + C_790 + C_440 + C_450)*mark-up coefficient, NA concept is applied
P.11	Output (from SBS)	=	

Adjustments are made to eliminate holding gains from the stocks of work-in-progress, finished products and goods for resale (HG adjustment).

Adjustments are made for capitalised own-account produced assets.

Adjustments in output are made for goods and services produced by employers and provided to employees cheaper or free of charge (adjustment for income in kind). The output includes all primary and secondary production provided as income in kind, such as private use of business cars (rental services of motor vehicles, product 1.N.771inc), company residential buildings (1.L.682inc) and other services produced by employers (1.R.93inc), see Table 3.8.

Table 3.8 Output according to NA concept

NA code	NA adjustments		Comments
P.11	Output (from SBS)	+	
HG	Revaluation of stocks	+/-	Holding gains elimination
Capitalised own-account produced assets	Expert opinions	+	SBS information verification at the enterprise level
ST	Standing timber	+	1.A.0211
Income	Income in kind	+	1.N.771inc, 1.L.682inc, 1.R.93inc
Exhaustiveness	Tips	+	See text below
Exhaustiveness	Underreported turnover	+	See text below
Exhaustiveness	Non-registered economy	+	See text below
Software	Own-account produced software	+	1.J.6299
Originals	Entertainment, literary and artistic originals	+	1.J.591, 1.J.599, 1.R.901, 1.R.902
R&D	Own-account produced R&D	+	1.M.7299
Mineral	Own-account mineral exploration	+	1.B.0999
DC	Own-account decommissioning costs	+	1.F.4399
Other imputations	Other imputations (from BOP, foreign branches, reclassification)	+	See text below
P.1	Output (NA concept)	=	

Estimates for tips are made in the case of hotels, restaurants and bars, taxi services. Two types of adjustments to output and value added are made: for underreported turnover and for non-registered economy based on the labour input method (exhaustiveness adjustment). Estimates of the illegal economy are also added.

Own-account produced software, R&D, decommissioning costs, mineral exploration, originals and net growth of standing timber are estimated and added to output.

Other imputations are also made, which include:

- Imputations of missing output for the entities that have significant transactions (i.e. export) with non-residents based on BOP;
- Imputations of output for the foreign branches;
- Reclassification of the units from S.12, S.13, S.15 to S.11.

Intermediate consumption

Intermediate consumption includes goods and services such as raw materials, semi-finished goods, parts, fuel, business services, etc. used for the production of primary and secondary outputs by industry. The following adjustments are made to business statistics data for the non-financial sector to meet the requirements of the national accounts. Intermediate consumption according to the business statistics concept is presented in Table 3.9 and according to NA concepts in Table 3.10. For financial corporations, see Section 3.17. For unincorporated enterprises, see Section 3.19. For NPISH, see Section 3.25.

Table 3.9 Intermediate consumption according to business statistics concept

SBS code	SBS item description		Comments
C_210	Shipped into production: raw materials, semi-finished goods, components, packing materials, maintenance and repair materials, office materials, non-capitalised small tools	+	
C_270	Payments to subcontractors for construction work in foreign countries	+	For Construction (F)
C_320	Sub-contracting costs	+	
C_330	Payments for rental and operational leasing	+	
H_060_29	Right-of-use real estate assets – payment for rental and operating leasing	+	To avoid double counting of assets (both in the lessor's and lessee's data), the column "Right of use of assets" is added to the fixed assets table in statistical questionnaires (SBS), where lessees can reflect assets taken out on operating leases that are added to the balance sheet according to the new IFRS 16 "Leases" standard.
H_060_45	Right-of-use tangible assets – payment for rental and operating leasing	+	
C_340	Payments for agency workers	+	
C_345	Water supply services	+	
C_350	Purchases of services, of which:	+	
C_400	Electricity	+	
C_410	Fuels	+	
C_420	Heat energy	+	
C_790	Other operating expenses (services of business associations)	+	
E_31	Capitalised durables (e.g. furniture)	-	% of P.2 is allocated to P.51
E_65	Insurance premiums	-	% of P.2, NA concept is applied
E_682	Rents on land	-	% of P.2, NA concept is applied
C_560 part of	Business travel costs on the transportation and accommodation	+	% of 560, NA concept is applied
C_530 part of	State fees as purchases of services	+	% of 530, NA concept is applied
P.2	Intermediate consumption (from SBS)	=	

Table 3.10 Intermediate consumption according to NA concepts

NA code	NA adjustments		Comments
P.2	Intermediate consumption (from SBS)	+	
Insurance	Allocation of insurance	+	See point g)
FISIM	Allocation of FISIM	+	See point h)
HG	Revaluation of material stocks	+/-	Holding gains elimination, see point c)
Income	Income in kind	-	
R&D	Expenditure on R&D services	-	See point f), except activity M.72
Originals	Entertainment, literary and artistic originals	-	See point e)
DC	Decommissioning costs	-	
ME	Mineral exploration costs	-	
Other adjustments		+/-	See text below
P.2	Intermediate consumption (NA concept)	=	

The following adjustments are made:

a) Durable goods of small value

For durable goods, the Estonian Accounting Act considers commodities with economic life of at least one year as fixed assets. In the law, no threshold is specified for the minimum value of those commodities. According to ESA 2010 concepts, the purchase of small tools for production purposes is recorded as intermediate consumption. In national accounts, durable goods (e.g. furniture) are excluded from intermediate consumption (% of P.2 varies by activity) and included in the GFCF (see Table 3.9) because of their long economic life.

b) Major repairs and renovations

According to the Estonian Accounting Act, expenses which substantially extend the working life, increase the performance and capacity of an asset, increase the quality of production or decrease the expenses of production, should be treated as expenses on reconstruction and recorded as GFCF. This statement is generally in line with the NA requirements and no adjustment needs to be made to the business accounts.

For the general government sector, the treatment of major repairs and renovations is covered in the Public Sector Financial Statements and recorded as GFCF.

c) Valuation of materials

The materials are valued at purchase prices. The valuation of inventories in the source statistics follows the ESA 2010 requirements for inventories and trade stocks. The adjustments are made to exclude holding gains from the valuation of materials used in production. For a more detailed description, see Section 5.11.

d) Computer software and databases

According to the Estonian Accounting Act, software could be classified as belonging either to tangible or intangible fixed assets. If it is purchased inseparably connected with hardware, it is classified as a tangible asset in the business accounts. When the use of software is independent from the hardware, it is classified as an intangible fixed asset.

For the general government sector, the treatment of computer software is covered in the Public Sector Financial Statements and recorded as GFCF.

e) Entertainment, literary and artistic originals

Entertainment, literary and artistic originals misreported as intermediate consumption are included in the GFCF.

f) Research and development

Under the ESA 2010 definition, R&D services purchased by activities (except NACE 72 to be considered as sub-contracting) misreported as intermediate consumption are included in the GFCF. For more information, see Section 3.19.

g) Insurance services

To arrive at the service charge concept of insurance services, adjustments are made. Insurance payments are presented on an accrual basis in private accounting. For the financial sector, insurance service charges are calculated by adjusting insurance payments with the claims and premiums ratio resulting from insurance output accounting. Based on the accounting of insurance production, the output of insurance is allocated to the expenditure side of other sectors, taking into account the export of services as well as insurance premiums and claims. Insurance service charges are divided among exports to non-resident policyholders (S.2), non-financial corporations (S.11), financial corporations (S.12), general government (S.13), households (S.14) and non-profit institutions serving households (S.15). See also the description in Section 0.e).

h) Production and allocation of FISIM

Eesti Pank collects the data of business banks and large leasing companies with a survey. Statistics Estonia receives the data from Eesti Pank in a format which meets the national accounting concepts of ESA 2010. Statistics Estonia uses administrative data of other financial intermediaries (S.125) received from the Business Register (financial statements). From this source, the data consistent with ESA 2010 concepts are included in the FISIM calculation. FISIM is allocated to the users. For more information, see Section 3.17.

i) Leasing

The intermediate consumption of non-financial corporations includes rentals paid on the use of fixed assets, whether equipment, cars or buildings, that are leased from other companies under an operating lease. See Table 3.9.

In national accounts, an adjustment to intermediate consumption is made by allocating a part of operational leasing (18–54%) to the GFCF, assuming it is financial leasing. Eesti Pank provides operating lease data broken down by new sales and residual values. The operating

lease residual data are removed from the intermediate consumption. Data on new sales of operating leases are forwarded to the investments.

For the general government sector, the treatment of operational leasing is covered in the Public Sector Financial Statements. Financial leasing is recorded in the balance sheet under fixed assets and is therefore counted as gross fixed capital formation. Operational leasing is recorded under operating costs and as intermediate consumption, except the accounts “Rental of land vehicles” with counterpart sectors S.1102 or S.12, since it is assumed that this is financial leasing.

j) Margins on trading financial assets

Acquiring and disposing of financial assets and liabilities in financial markets is one of four main ways distinguished in ESA 2010 in which financial services are provided and charged for.

Statistics Estonia carried out a comprehensive analysis of source data, the market participants’ financial reports and the reporting requirements in order to identify available information sufficient for compiling the statistics on margins on trading financial assets according to paragraph 3.73 of ESA 2010.

Margins on trading financial assets are included in the output of institutional sector S.12 in 2021 but the potential impact of this type of financial services on GNI is negligible and is below the materiality threshold of 0.1% of GNI.

A summary table showing the size of various conceptual adjustments made to output and intermediate consumption is provided below (Table 3.11).

Table 3.11 Conceptual adjustments by NACE Section, 2021
(million euros)

NACE Section	Allocation of FISIM	Allocation of insurance	Other conceptual adjustments	Total conceptual adjustments
Agriculture, forestry and fishing (A)				
output	0.0	0.0	-47.3	-47.3
intermediate consumption	26.8	1.2	4.6	32.5
value added	-26.8	-1.2	-51.8	-79.8
Mining and quarrying (B)				
output	0.0	0.0	-12.2	-12.2
intermediate consumption	1.6	0.1	-0.3	1.4
value added	-1.6	-0.1	-11.9	-13.6
Manufacturing (C)				
output	0.0	0.0	-776.7	-776.7
intermediate consumption	43.5	10.9	39.4	93.8
value added	-43.5	-10.9	-816.1	-870.5
Electricity, gas, steam and air conditioning supply (D)				
output	0.0	0.0	-1,220.3	-1,220.3
intermediate consumption	12.7	1.6	-8.8	5.5
value added	-12.7	-1.6	-1,211.5	-1,225.8

NACE Section	Allocation of FISIM	Allocation of insurance	Other conceptual adjustments	Total conceptual adjustments
Water supply; sewerage, waste management and remediation activities (E)				
output	0.0	0.0	-21.0	-21.0
intermediate consumption	2.4	1.5	-5.7	-1.9
value added	-2.4	-1.5	-15.2	-19.1
Construction (F)				
output	0.0	0.0	-2,138.1	-2,138.1
intermediate consumption	19.5	6.7	61.4	87.6
value added	-19.5	-6.7	-2,199.4	-2,225.7
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)				
output	0.0	0.0	-26,051.9	-26,051.9
intermediate consumption	33.6	11.3	-86.0	-41.1
value added	-33.6	-11.3	-25,965.9	-26,010.8
Transportation and storage (H)				
output	0.1	1.0	-280.3	-279.2
intermediate consumption	19.5	26.8	-68.4	-22.1
value added	-19.4	-25.8	-211.9	-257.1
Accommodation and food service activities (I)				
output	0.0	0.0	-24.8	-24.8
intermediate consumption	5.0	0.8	-13.5	-7.7
value added	-5.0	-0.8	-11.4	-17.1
Information and communication (J)				
output	0.0	0.1	-173.9	-173.8
intermediate consumption	5.4	5.1	-29.9	-19.4
value added	-5.3	-5.0	-144.0	-154.4
Financial and insurance activities (K)				
output	0.0	0.0	0.0	0.0
intermediate consumption	10.9	23.6	-1.6	32.9
value added	-10.9	-23.6	1.6	-32.9
Real estate activities (L)				
output	92.8	15.5	-290.8	-182.5
intermediate consumption	271.8	38.4	153.6	463.8
value added	-179.0	-22.8	-444.4	-646.2
<i>Imputed rents of owner-occupied dwellings (part of L)</i>				
output	85.1	14.2	73.2	172.5
intermediate consumption	162.0	28.7	163.8	354.5
value added	-76.8	-14.5	-90.6	-182.0
Professional, scientific and technical activities (M)				
output	0.0	0.1	214.7	214.8
intermediate consumption	13.3	5.1	-34.0	-15.6
value added	-13.3	-5.0	248.8	230.4

NACE Section	Allocation of FISIM	Allocation of insurance	Other conceptual adjustments	Total conceptual adjustments
Administrative and support service activities (N)				
output	0.0	0.0	-149.2	-149.2
intermediate consumption	13.4	2.5	11.6	27.5
value added	-13.4	-2.5	-160.8	-176.7
Public administration and defence; compulsory social security (O)				
output	11.3	1.7	-12.0	1.0
intermediate consumption	11.3	1.7	-12.0	1.0
value added	0.0	0.0	0.0	0.0
Education (P)				
output	0.3	0.5	-8.6	-7.8
intermediate consumption	1.0	0.6	-10.2	-8.7
value added	-0.7	-0.1	1.6	0.9
Human health and social work activities (Q)				
output	0.3	0.5	-4.8	-4.0
intermediate consumption	2.9	1.1	-10.7	-6.7
value added	-2.7	-0.6	6.0	2.7
Arts, entertainment and recreation (R)				
output	0.4	0.4	-69.2	-68.5
intermediate consumption	3.1	0.6	-8.6	-4.8
value added	-2.8	-0.3	-60.7	-63.7
Other service activities (S)				
output	0.4	0.1	-4.6	-4.1
intermediate consumption	2.2	0.6	-5.7	-2.9
value added	-1.8	-0.5	1.1	-1.2
Activities of households as employers of domestic personnel and undifferentiated goods and services production of households for own use (T)				
output	0.0	0.0	0.0	0.0
intermediate consumption	0.0	0.0	0.0	0.0
value added	0.0	0.0	0.0	0.0
Total				
output	105.5	19.9	-31,070.8	-30,945.4
intermediate consumption	499.9	140.3	-24.9	615.2
value added	-394.3	-120.4	-31,045.9	-31,560.6

The breakdown of the item ‘other conceptual adjustments’ by type of adjustment for the total economy, for output and intermediate consumption is provided in the box below.

Other conceptual adjustments by type of adjustment, 2021
(million euros)

Sector	Activities	Transactions	Value	Content
S.11	All	P.1	-64.1	Payouts of lottery winnings
S.11	All	P.1	-27,442.2	Goods purchased for resale

Sector	Activities	Transactions	Value	Content
S.11	All	P.1	-1,542.4	Services purchased for resale
S.11	All	P.1	-305.5	Real estate purchased for resale
S.11	All	P.1	-2,030.8	Payments to subcontractors
S.11	All	P.1	122.3	Subsidies on products
S.11	All	P.1	-122.4	HG on work-in-progress inventory
S.11	All	P.1	-67.9	HG on finished goods inventory
S.11	All	P.1	-194.9	HG on goods
S.11	All	P.1	-5.3	Standing timber
S.11	All	P.1	478.8	Work-in-progress inventory
S.11	All	P.1	48.8	Finished goods inventory
S.11	All	P.1	19.3	Rental notional residential units
S.11	All	P.2	-12.4	Purchased originals
S.11	All	P.2	101.2	Daily allowances (P.2)
S.11	All	P.2	-211.0	Insurance premiums
S.11	All	P.2	-1.2	Completion costs on your own
S.11	All	P.2	75.7	Payments to subcontractors
S.11	All	P.2	-59.9	Capitalised durables (e.g. furniture)
S.11	All	P.2	-37.1	Rents on land
S.11	All	P.2	-190.2	Operational leasing to financial leasing
S.11	All	P.2	183.5	HG on materials
S.11	All	P.2	-3.2	Mineral exploration
S.11	All	P.2	21.4	Rental notional residential units
S.11	All	P.2	37.4	State duties
S.11	All	P.2	-57.6	Purchased R&D
S.12	All	P.2	-1.6	Daily allowances (D.111)
S.13	All	P.1	-5.2	Purchased originals
S.13	All	P.1	-24.6	Purchased R&D
S.13	All	P.2	-5.2	Purchased originals
S.13	All	P.2	-24.6	Purchased R&D
S.14	All	P.1	4.5	Subsidies on products
S.14	All	P.1	-7.2	Finished goods inventory
S.14	All	P.1	6.5	Actual rental
S.14	All	P.1	54.0	Imputed rental
S.14	All	P.1	7.6	Standing timber
S.14	All	P.2	0.6	State duties (1.O.842)
S.14	All	P.2	21.9	Actual rental
S.14	All	P.2	144.6	Imputed rental
S.14	All	P.2	-1.7	Daily allowances (D.111)
S.15	All	P.2	-5.7	Daily allowances (D.111)
Total	All	P.1	-31,070.8	Output
Total	All	P.2	-24.9	Intermediate consumption

3.5. Roles of direct and indirect estimation methods and of benchmarks and extrapolations

At present, direct estimation methods dominate in the production approach. They are used for regular observations in the non-financial corporations, financial corporations, general government, NPISH and households sectors (see Table 3.12 below).

Table 3.12 Estimation method used by NACE Section, 2021

NACE Section	Surveys and censuses	Administrative records	Combined data	Benchmark extrapolations	Commodity Flow Model	CFC (PIM)	Dwellings stratification method	FISIM	Insurance	Other E&M
A	X	X	X							
B		X	X							
C		X	X							
D		X	X							
E		X	X							
F		X	X							
G		X	X							
H		X	X			X				
I		X	X							
J		X	X			X				
K	X	X						X	X	
L	X	X	X			X	X			X
NACE_L Imputed		X				X	X			X
M		X	X			X				
N		X	X							
O		X				X				
P	X	X	X			X				
Q	X	X	X			X				
R	X	X	X			X				
S	X	X	X			X				
T										

Indirect methods are used for the calculations of own-account production by households. Thus, estimates for the production of fuel wood and fishing for own final use, own-account construction, capital repair of dwellings and dwelling services by households are produced by national accounts experts based on the HBS and other sources.

For the calculation of FISIM, both direct and indirect estimation methods are used. The direct method is based on the main source data provided by Eesti Pank. In indirect estimation, the output of each industry is used for the allocation of FISIM among user industries.

In the production approach, CFC calculations are based on the PIM model. For more information, see Section 4.12.

NA estimates based on extrapolations from a benchmark year

Benchmarks started playing a role from the reference year 2000 when the compilation of the supply and use tables was integrated into the regular national accounts process. The compilation of SUTs requires a lot of data, especially specific information on products, on a regular basis. The annual PRODCOM survey provides information on the domestic production of industries at a detailed products level. The SBS survey provides the breakdown of turnover by activity (Module D) on an annual basis. The more detailed surveys on expenses on materials, supplies, fuels and services (Module E of EKOMAR) are carried out multi-yearly with the purpose of reducing the response burden of enterprises. The first benchmark year in accordance with NACE Rev. 2 and CPA 2008 classifications was 2008. The detailed data on the cost structure for the supply and use tables are collected once in every five years (2018 the latest.). The extrapolation technique was used for the intermediate year 2021 by applying the volume and price indices to the cost detail of the previous year's estimates.

3.6. Main approaches taken with respect to exhaustiveness

GDP compilation is primarily based on the data from statistical surveys, administrative and combined sources. To ensure the coverage of hidden activities, adjustments for non-observed economy are made.

In national accounts, the following types of non-exhaustiveness are considered the most important and are currently included in the estimates of the GDP: adjustments for non-registered underground economy (non-exhaustiveness type N1), illegal activities (type N2), producers not required to register (type N3), misreporting (type N6) and other GDP under-coverage (type N7). Non-exhaustiveness adjustments to GDP estimates by production approach are related to all institutional sectors. Adjustments for each type of non-exhaustiveness in the production approach are described in Chapter 7.

Table 3.13 shows the size of various exhaustiveness adjustments in the breakdown of NACE sections and types of non-exhaustiveness (N1–N7).

Table 3.13 Exhaustiveness adjustments by NACE Section, 2021
(million euros)

NACE Section	Type of non-exhaustiveness					Total	As % of GDP	As % of initial value added
	Non- registe- red economy	Illegal activities	Producers not required to register	Mis- reporting	Other under- coverage			
	N1	N2	N3	N6	N7			
A	26.7	0.0	9.3	0.5	5.5	42.0	0.1	7.4
B	0.0	0.0	0.0	0.6	6.7	7.3	0.0	5.2
C	63.2	5.6	0.0	30.4	122.5	221.7	0.7	5.7
D	0.0	0.0	0.0	1.3	28.9	30.2	0.1	3.5
E	0.1	0.0	0.0	0.8	4.1	5.0	0.0	2.2
F	68.8	0.0	82.1	45.2	22.0	218.0	0.7	13.7
G	24.3	76.7	0.0	69.6	51.2	221.8	0.7	6.9
H	12.8	0.0	0.0	11.7	44.9	69.3	0.2	4.1
I	4.9	0.0	0.0	8.8	21.7	35.4	0.1	11.3
J	3.1	0.0	0.0	45.0	200.9	249.1	0.8	15.2
K	0.0	0.0	0.0	0.0	70.8	70.8	0.2	5.9

NACE Section	Type of non-exhaustiveness					Total	As % of GDP	As % of initial value added
	Non- registe- red economy	Illegal activities	Producers not required to register	Mis- reporting	Other under- coverage			
	N1	N2	N3	N6	N7			
L	18.7	0.0	0.0	19.1	4.8	42.7	0.1	1.4
Imputed rental	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
M	7.1	0.0	0.0	53.6	48.7	109.3	0.3	6.6
N	7.5	0.0	0.0	27.7	23.0	58.2	0.2	6.5
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P	1.3	0.0	0.0	3.0	2.5	6.8	0.0	0.5
Q	2.1	0.0	0.0	7.7	4.0	13.7	0.0	1.0
R	2.2	0.0	0.0	6.8	7.0	16.0	0.1	3.6
S	7.1	2.5	0.0	6.8	1.2	17.5	0.1	7.7
T	0.0	0.0	16.2	0.0	0.0	16.2	0.1	100.0
Total	249.9	84.8	107.5	338.4	670.2	1,450.9	4.6	5.6
% of GDP	0.8	0.3	0.3	1.1	2.1	4.6		

3.7. Agriculture, forestry and fishing (NACE Rev. 2 Section A)

This section provides information on the calculation of output and intermediate consumption for agriculture (NACE Division 01), forestry (02) and fishing (03).

The value added of agriculture, forestry and fishing in 2021 was estimated at 611.3 million euros with a share of 2.0% in the GNI (see Table 3.14). Crop and animal production and related service activities accounted for 45.2%, forestry for 49.8% and fishing for 5.0% of the total value added of the economic activity.

Table 3.14 Contribution of NACE Section A to GDP and GNI, 2021

NACE division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Crop and animal production, hunting and related service activities (01)					
output	1,133.6				
intermediate consumption	857.3				
value added	276.3	45.2	1.0	0.9	0.9
Forestry and logging (02)					
output	962.3				
intermediate consumption	657.7				
value added	304.6	49.8	1.1	1.0	1.0
Fishing and aquaculture (03)					
output	76.5				
intermediate consumption	46.1				
value added	30.4	5.0	0.1	0.1	0.1
Total					
output	2,172.4				
intermediate consumption	1,561.0				
value added	611.3	100.0	2.2	1.9	2.0

The value added of agriculture, forestry and fishing in 2021 was generated by the non-financial corporations sector (82.9%) and households sector (17.1%); see Table 3.15.

Table 3.15 Breakdown of NACE Section A by NACE Division and by institutional sector, 2021
(million euros)

NACE division	Total	Institutional sector			
		S.11	% of S.11 in division	S.14	% of S.14 in division
Crop and animal production, hunting and related service activities (01)					
output	1,133.6	988.4		145.2	
intermediate consumption	857.3	785.6		71.6	
value added	276.3	202.8	73.4	73.5	26.6
Forestry and logging (02)					
output	962.3	919.7		42.6	
intermediate consumption	657.7	638.9		18.8	
value added	304.6	280.9	92.2	23.8	7.8
Fishing and aquaculture (03)					
output	76.5	64.1		12.3	
intermediate consumption	46.1	41.1		5.0	
value added	30.4	23.0	75.8	7.3	24.2
Total					
output	2,172.4	1,972.3		200.1	
intermediate consumption	1,561.0	1,465.6		95.4	
value added	611.3	506.7	82.9	104.6	17.1

A number of adjustments are made due to differences in concepts, exhaustiveness and when balancing the supply and use tables. The total amount of adjustments made to the value added of agriculture, forestry and fishing in 2021 was -152.6 million euros or -20.0% compared to initial estimates, see Table 3.16.

Table 3.16 NACE Section A by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	2,140.1	1,376.2	763.9
..Surveys and censuses	147.0	70.8	76.1
..Administrative records	21.7	11.7	10.0
..Combined data	1,971.4	1,293.7	677.7
..Extrapolations and models	0.0	0.0	0.0
..Other	0.0	0.0	0.0
Adjustments	32.2	184.9	-152.6
..Data validation	6.2	123.3	-117.1
..Conceptual	-47.3	32.5	-79.8
..Exhaustiveness	71.0	29.0	42.0
..Balancing	2.3	0.0	2.3
Final estimate	2,172.4	1,561.0	611.3

3.7.1. Agriculture (NACE Rev. 2, Division 01)

Introduction

The economic accounts for agriculture (EAA) compiled by the Agricultural Statistics Team of the Economic and Environmental Statistics Department provide comprehensive information on the output, intermediate consumption and value added of the agricultural industry.

The agricultural industry of the EAA covers agricultural holdings (i.e. legal and natural persons) as well as agricultural household plots (i.e. agricultural small units). An agricultural holding is a production unit which has a single management, both technically and economically, which produces agricultural products or maintains its land in good agricultural and environmental condition and whose land use is registered with the Agricultural Registers and Information Board (ARIB) or which exceeds the threshold for an agricultural holding:

- 5 hectares of utilised agricultural area; or
- 2 hectares of arable land; or
- 0.5 hectares of potatoes; or
- 0.5 hectares of vegetables and strawberries; or
- 0.2 hectares of aromatic and medicinal plants and herbs, flowers, seeds, nurseries; or
- 0.3 hectares of fruit and berry plantations, other permanent crops (except nurseries); or
- 100 m² of greenhouses; or
- 1.7 livestock units.

An agricultural household plot is a unit which is smaller than an agricultural holding and whose land use is not registered with the Agricultural Registers and Information Board (ARIB), where there is at least 50 square metres of a kitchen garden or at least three fruit trees or six berry bushes or ten rabbits, ten domestic fowls or other farm animals or at least three beehives.

In addition, the agricultural industry of the EAA also includes agricultural enterprises classified in Group 01.6 of NACE Rev. 2 Section A, which provide support service activities to farms and post-harvest crop activities but are not themselves engaged in crop/animal production.

Enterprises engaged in hunting on a business basis (Group 01.7 of NACE Rev. 2 Section A) are not presented in the SBR. Units that offer hunting trips in Estonia are classified under the sports and recreation activity (NACE Rev. 2, Class 93.19), which includes support activities for sports or recreational hunting and fishing and also the operation of sports hunting preserves.

National accounts distinguish between agricultural activities owned by the non-financial corporations sector and by the household sector. One of them covers agricultural holdings as legal entities, including, among other things, those whose main activity is the provision of services in the agricultural market; the other covers agricultural enterprises as individual entrepreneurs (i.e. farms) and household plots for agricultural purposes, which can produce products both for sale on the market and for their own consumption.

Activity code	Activity	Sector	Type of producer	Source
M.A.01	Agriculture and related service activities	S.11	Market	EAA
H.A.01	Agriculture and related service activities	S.14	Market / For own final use	EAA

Data sources

The main data source for agriculture is the EAA compiled by the Agricultural Statistics Team of the Economic and Environmental Statistics Department. Surveys on agriculture are based on several administrative sources as well as annual, quarterly and monthly questionnaires. The most important administrative sources are: a) Integrated Administrative and Control System (IACS) for land use data which cover most of the utilised agricultural area, b) Register of Agricultural Animals, and related data which cover cattle, sheep, goats, pigs and beehives. Both of these two datasets are received from the Agricultural Registers and Information Board. Administrative data are also received from other institutions/registers – Agriculture and Food Board (slaughtering in slaughterhouses, seeds, honey production, etc), Estonian Animal Recording Centre (milk production), Centre of Estonian Rural Research and Knowledge (use of raw milk, production of wool, etc). Besides administrative sources, several statistical questionnaires are used, such as “Crop farming and grasslands maintenance”, “Yield”, “Purchases of crop products”, “Livestock farming”, “Purchase of livestock”, “Purchase of milk and milk products” and “Economic indicators of agricultural, forestry and fishing enterprises”. Additionally, structural surveys are organised every 3 to 4 years, and the Agricultural Census every 10 years. Output in agriculture is estimated by taking into account the sown area and production of crops as well as the number of livestock and livestock production in agricultural holdings.

Preliminary administrative data about crop areas are received in June. Preliminary information about yield is asked in September of year *n* with the questionnaire “Yield”. Final information on crop areas is received from the register in October, and final information on crop farming is asked in November of year *n* with the questionnaire “Crop farming and grasslands maintenance”. For crop production surveys, all agricultural holdings that are included in the Statistical Farm Register and have utilised agricultural land are taken into the population. For sampling, they are divided into groups of standard output from crop farming.

All holdings with a standard output of at least 200,000 euros are included in the sample; for smaller units, stratified simple random sampling is used. The survey “Crop farming and grasslands maintenance” collects final information on the sown area of all crops, the harvested area of some crops and the final amount of production received, the area where fertilisers are used, use of seeds, etc. Every five years, the survey also collects data about plant protection products, etc. Final data on crop production are normally calculated based on IACS land use data and the statistical survey on crop farming. In 2020, the Farm Structure Survey (FSS) was also organised in the form of a census; in the case of a few crops (like greenhouse vegetables), its areas have also been used in the following years.

Data on livestock output are calculated on the basis of administrative sources and annual, quarterly and monthly statistical questionnaires. Data from the Register of Agricultural Animals are received both quarterly (cattle, sheep, goats) and annually (cattle, sheep, goats, pigs and beehives). The numbers of cattle, sheep and goats (by different groups) are received for relevant reference dates and also by different events (such as slaughtering, births, etc.). Data about slaughtering in slaughterhouses from the Agriculture and Food Board are received monthly. Data about milk production per cow from the Estonian Animal Recording Centre are received quarterly. All the administrative data are used in combination with statistical questionnaires. Monthly questionnaires are collected on purchase of livestock and on milk collection by approved dairies.

A quarterly questionnaire is collected on poultry (the completion deadline is the eighth day after the end of the reference period). The quarterly poultry survey asks for egg production and poultry data which are not available from administrative registers. It covers units with at least 500 poultry heads.

Holdings with fur animals are surveyed totally. Only a few entities are still operating in this field, as the activity is prohibited and the last permits are valid only until 2025. Other data about agricultural livestock are available from administrative registers.

Information on service activities in agriculture is taken from the annual surveys on the economic indicators of agricultural, forestry and fishing enterprises. This information is taken from the amount of net sales that one legal person provided to another unit. Since 2004, the agricultural service activities that are directly related to agricultural production (sowing, ploughing, fertilisation, harvesting etc.) have been separated from other services.

The output of agricultural household plots is also taken into account. Agricultural household plots are not surveyed annually but they were surveyed in 2020 through the Household Budget Survey.

Output

The output of agricultural holdings includes the output of units whose main or secondary activity is agriculture (as all agricultural holdings, both legal and natural persons, are in the surveys and samples). Output valued at basic prices includes subsidies on products. Data about agricultural subsidies are received from the Ministry of Regional Affairs and Agriculture who receives these data directly from the Agricultural Registers and Information Board (see description in Section 3.29).

The output of agricultural products is recorded as being produced continuously over the entire production period, i.e. the recording period for agricultural accounts is the whole year. The stocks of animals are treated as stocks of work-in-progress during the production process and transformed into the stocks of finished products when the process is completed. Output is calculated as the sum of sales, payments in kind, additions to stocks and intra-unit consumed products. Within the industry, non-marketable intra-unit consumed products, such as animal feeding stuffs produced in crop production, are included in agricultural output. Harvest losses of crops are not recorded in output and they are also not recorded as losses in the accounting system.

In 2021, EAA output at basic prices was estimated at 1,129.2 million euros and NA output at 1,133.6 million euros (see Table 3.18). Agricultural output (produced in crop and livestock farming, and agricultural services) accounted for 97%, the processing of agricultural products and other non-agricultural production for 3% of total output.

Intermediate consumption

Data for intermediate consumption calculations are received via the statistical survey on the economic indicators of agricultural, forestry and fishing enterprises (PMK), which is collected from legal persons whose principal activity belongs to NACE Section A, and from administrative sources. The data on bigger enterprises are collected totally. If necessary, for the biggest enterprises (enterprises with more than 9 employees), data are imputed on the basis of accounting data. For smaller enterprises (≤ 9 employees), model-based calculation is used, based on administrative data. For intermediate consumption calculations in the EAA, only the

data of enterprises belonging to NACE Division 01 are taken into account. The questionnaire covers, among others, the following costs as components of intermediate consumption: seeds, fertilisers, plant protection products, veterinary products, fodder, materials for the repair of buildings and machinery, agricultural services. In addition to those cost elements, the questionnaire covers information about the consumption of fixed capital and labour costs (i.e. wages and salaries, social contributions).

For legal persons whose secondary activity is agriculture and for natural persons, the intermediate consumption is calculated by asking the ratios of production costs to output from those legal persons whose principal activity is agriculture.

Own-account agricultural production for own final use

The output of agricultural household plots is estimated for different field crops. The output is estimated annually on the basis of available non-regular information about the sown area of field crops and annual yield per hectare in the agricultural holdings. Data about most livestock are available from administrative registers; poultry and eggs output is estimated annually on the basis of available non-regular information about the number of poultry heads and annual average production in the agricultural holdings. Their value of output and intermediate consumption are calculated by taking the corresponding figures from the data of other agricultural holdings (average unit value, the ratio of intermediate consumption to output). The output of agricultural products produced for own final use by households consists of two products: crops and products of gardening and horticulture, and animal products. The output value of agricultural products for own final use was estimated at 30.4 million euros.

Transition from economic accounts for agriculture to national accounts

The economic accounts for agriculture provide comprehensive information on output, intermediate consumption and value added for the agricultural industry and are used as a basis for national accounts estimates. There are some conceptual differences between the EAA and NA estimates, described in Table 3.17 and Table 3.18.

The production of seed for research or certification and associated agricultural services other than agricultural contract work (e.g. the operation of irrigation systems) are not relevant for Estonia. Agricultural production for own final consumption by household plots is taken into account in the EAA and is therefore already included in NA. Agricultural products produced by units whose principal activity is not agriculture are included in the EAA; and therefore, they have to be excluded from the NA estimates for other activities (see Table 3.17).

Table 3.17 Transition from EAA to NA (based on Commission Regulation (EC) No 212/2008)

	EAA agricultural industry	NA agricultural branch
Units engaged in seed production (for research or certification)	Not relevant	Not relevant
Production of units providing associated agricultural services other than agricultural contract work (e.g. the operation of irrigation systems)	Not relevant	Not relevant
Units for which the agricultural activity represents solely a leisure activity	Included	Included
Agricultural activities of units whose principal activity is not agricultural	Included	Included as agricultural activity and excluded from other activities

Additionally, the following adjustments are made to the EAA data to comply with the NA definition: the production of own-account construction, software and R&D, and income in kind are added to output, and FISIM is added to intermediate consumption.

Table 3.18 Composition of output in agriculture (NACE Division 01), 2021
(million euros)

	EAA	NA
Output of agricultural industry (EAA)	1,129.2	1,129.2
Own-account construction		1.1
Own-account R&D		0.6
Income in kind		2.7
Output of agricultural industry (NA)		1,133.6

Information on steps taken to avoid double counting when other branches have agriculture as secondary activity

The agricultural secondary activities of non-agricultural industries engaged in crop and animal production are identified in the SBS survey and are excluded from the estimates of those activities to avoid double counting. The value of agricultural secondary output produced by non-agricultural industries in 2021 was estimated at 28.6 million euros (see Table 3.19).

Table 3.19 Adjustments made to non-agricultural industries, 2021
(million euros)

NACE Section	NACE	Agricultural output	Intermediate consumption	Value added
	Total adjustment	-28.6	-22.9	-5.7

3.7.2. Forestry (NACE Rev. 2, Division 02)

Introduction

In 2021, the gross value added in forestry amounted to 304.6 million euros with a share of 1.0% in the GNI (see Table 3.14 above).

The value added of forestry was generated by the sectors of non-financial corporations S.11 (92.2%) and households S.14 (7.8%). For more information, see Table 3.15 above.

In NACE Division 02, one activity of non-financial corporations and two activities of the households sector are specified, of which one activity for own final use.

Activity	Sector	Type of producer	Source
Forestry and logging	S.11	Market	Surveys on economic indicators of agricultural, forestry and fishing enterprises, energy and fuel survey, foreign trade statistics, BOP; Estonian Environment Agency, State Forest Management Centre
Forestry and logging	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)
Production of fuel wood for own final use	S.14	For own final use	NA estimates

Data sources

The annual Structural Business Statistics survey (EKOMAR) is the main data source for estimating output and intermediate consumption in non-financial corporations. PRODCOM survey data are used to compile the industrial output by product. Data from the energy and fuel survey are used to divide the intermediate consumption of energy and fuels into product groups. The methodologies for data collection and processing in the SBS, PRODCOM and energy and fuel surveys are described in Chapter 10. Source data for the net growth of standing timber are provided by the Estonian Environment Agency (EEA), and source data for price data by the State Forest Management Centre (RMK).

Other sources used for estimating output and intermediate consumption include ITGS and BOP data from Eesti Pank. These data sources are used for preparing estimates for direct exports as part of output and for direct imports of goods and services relevant for intermediate consumption. A comparison of data for consistency between various sources is also carried out at the individual enterprise level. In addition, the annual reports of enterprises received from the Business Register are also used as they provide useful information for the compilers of NA. For more information, see in Chapter 10.

For unincorporated enterprises, the main source is the tax declarations on the business income of sole proprietors received from the Tax and Customs Board. According to this source, the number of registered sole proprietors in forestry was 784 or 4.0% of the total number of sole proprietors in 2021. The households sector covers sole proprietors engaged in forestry and logging service activities as well as natural persons who have income from the sale of standing crop in their own forest

Output

The compilation method for output is the same as for all activities that present the annual Structural Business Statistics survey (EKOMAR) (see description in Section 3.9). The transition from private accounting to the national accounts concepts under ESA 2010 is described in Section 3.4.

For unincorporated enterprises, the estimation methodology is described in Section 3.19.

Intermediate consumption

For non-financial corporations, data for intermediate consumption are obtained from the SBS Module C “Expenses, revenues and profit” on an annual basis and from Module E “Breakdown of expenses on materials, supplies, intermediate goods and services” on a five-yearly basis (2008, 2013, 2018, etc.) (see description in Section 3.9).

The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

For unincorporated enterprises, intermediate consumption is obtained by using the data of tax declarations on the business income of sole proprietors received from the ETCB.

Production of fuel wood for own final use

In the households sector, estimates are made for the production of fuel food for own final use (activity O.A.02). Output is estimated using the number of farms, the quantitative estimation of fuel wood consumed for own use, and the average prices of timber. Estimates are based on agricultural and forestry statistics and also on price information from the State Forest

Management Centre. The assumption underlying the estimation is that most farms own some forest land where farmers obtain fuel wood for their own needs.

Please see detailed description in Section 7.1.3.3.1.

Net growth of standing timber

The estimates for net growth of standing timber were included in the national accounts during the major revision in 2019. The methodology has been developed in cooperation with the Estonian Environment Agency (EEA). The data include only forest land with managed and partially managed forest, as no management takes place in strictly protected forests. For more information, see Section 5.11.

3.7.3. Fishing (NACE Rev. 2, Division 03)

Introduction

In 2021, the gross value added in fishing was 30.0 million euros, which accounted for 0.1% of the GNI (Table 3.14 above).

The value added of fishing was generated by the non-financial corporations (75.8%) and households (24.2%) sectors. For more information, see Table 3.15 above.

In NACE Division 03, one activity of the non-financial corporations sector and two activities of the households sector are specified, of which one activity for own final use.

Activity	Sector	Type of producer	Source
Fishing and aquaculture	S.11	Market	Surveys on economic indicators of agricultural, forestry and fishing enterprises, energy and fuel survey, foreign trade statistics, BOP
Fishing and aquaculture	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)
Fishing for own final use	S.14	For own final use	NA estimates

Data sources

The annual Structural Business Statistics survey (EKOMAR) is the main data source for estimating output and intermediate consumption in non-financial corporations. PRODCOM survey data are used to compile the industrial output by product. Data from the energy and fuel survey are used to divide the intermediate consumption of energy and fuels into product groups. The methodologies for data collection and processing in the SBS, PRODCOM and energy and fuel surveys are described in Chapter 10.

Other sources used for the estimation of output and intermediate consumption include foreign trade statistics (FTS) and BOP data from Eesti Pank. These data sources are used for preparing estimates for direct exports as part of output and for direct imports of goods and services relevant for intermediate consumption. A comparison of data for consistency between various sources at the individual enterprise level is also carried out. In addition, the annual reports of enterprises received from the Business Register are used as well, as they provide useful information for the compilers of NA. For more information, see Chapter 10.

For unincorporated enterprises in the households sector, tax declarations on the business income of sole proprietors received from the Tax and Customs Board are the main data source. According to this source, the number of registered sole proprietors engaged in fishing was 613, which accounts for 3.1% of the total number of sole proprietors in 2021.

Output

The compilation method for output is the same as for all activities that present the annual Structural Business Statistics survey (EKOMAR) (see description in Section 3.9). The transition from private accounting to the national accounts concepts under ESA 2010 is described in Section 3.4.

The estimation methodology used for unincorporated enterprises in the households sector is described in Section 3.19.

Intermediate consumption

For non-financial corporations, data for intermediate consumption are obtained from the SBS Module C “Expenses, revenues and profit” on an annual basis and from Module E “Breakdown of expenses on materials, supplies, intermediate goods and services” on a five-yearly basis (2008, 2013, 2018, etc.) (see description in Section 3.9).

The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

Production for own final use (activity A.03)

Output estimates for the fishing activity for own final use (O.A.03) are based on the HBS, where respondents are asked to provide information on the value of the volume of catch at market prices. Intermediate consumption is calculated by using a fixed percentage of the IC/output ratio in fishing.

As the HBS was not conducted in 2021, HBS data derived using regression models were used instead. The same estimates are included in the production and in the expenditure approach.

3.8. Mining and quarrying (NACE Rev. 2 Section B)

Introduction

In Estonia, the most important mineral resource is oil shale, which is used as fuel in the production of electricity and heat, and also as raw material in the production of shale oil in the chemical industry.

The gross value added in mining and quarrying was 147.4 million euros at current prices, which accounted for 0.5% of the GNI in 2021; see Table 3.20.

Table 3.20 Contribution of NACE Section B to GDP and GNI, 2021

NACE Section	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Mining and quarrying (05_09)					
output	332.3				
intermediate consumption	185.0				
value added	147.4	100.0	0.5	0.5	0.5

In 2021, gross value added was generated by the non-financial corporations (100.0%) and households (0.0%) sectors; see Table 3.21.

In NACE Section B, one activity of the non-financial corporations sector is distinguished. The activity covers the extraction and agglomeration of peat, oil shale, other mining and quarrying, and mining support service activities. One market activity of the households sector is also specified, but the output of this industry is rather negligible.

Activity code	Activity	Sector	Type of producer	Source
M.B.05_09	Mining and quarrying	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, PRODCOM, energy and fuel survey, foreign trade statistics, BOP
H.B.05_09	Mining and quarrying	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)

Table 3.21 Breakdown of NACE Section B by institutional sector, 2021
(million euros)

NACE Section	Total	Institutional sector			
		S.11	% of S.11 in division	S.14	% of S.14 in division
Mining and quarrying (05_09)					
output	332.3	332.3		0.02	
intermediate consumption	185.0	185.0		0.01	
value added	147.4	147.4	100.0	0.01	0.01

Data sources

The annual Structural Business Statistics survey (EKOMAR) is the main data source for estimating output and intermediate consumption in non-financial corporations. PRODCOM survey data are used to compile the industrial output by product. Data from the energy and fuel survey are used to divide the intermediate consumption of energy and fuels into product groups. The methodologies for data collection and processing in the SBS, PRODCOM and energy and fuel surveys are described in Chapter 10.

Other sources used for the estimation of output and intermediate consumption include ITGS and BOP data from Eesti Pank. Those data sources are used for preparing estimates for direct exports as part of output and for direct imports of goods and services relevant for intermediate consumption. A comparison of data for consistency between various sources at the individual enterprise level is also carried out. In addition, the annual reports of enterprises received from the Business Register are used as well, as they provide useful information for the compilers of NA. For more information, see Chapter 10.

For unincorporated enterprises in the households sector, tax declarations on the business income of sole proprietors received from the Tax and Customs Board are the main data source.

Output

The compilation method for output is the same as for manufacturing activities belonging to NACE Section C (see description in Section 3.9). The transition from private accounting to the national accounts concepts under ESA 2010 is described in Section 3.4.

For unincorporated enterprises in the households sector, the estimation methodology is described in Section 3.19.

Intermediate consumption

The compilation method for intermediate consumption is described in Section 3.9. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

Adjustments made to output and intermediate consumption

A number of adjustments are made for differences in concepts, exhaustiveness and when balancing the supply and use tables. The total amount of adjustments made to the value added of mining and quarrying in 2021 was -5.7 million euros or -3.7% compared to initial estimates; see Table 3.22.

Table 3.22 NACE Section B by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	336.3	183.3	153.0
..Surveys and censuses	0.0	0.0	0.0
..Administrative records	0.0	0.0	0.0
..Combined data	336.3	183.3	153.0
..Extrapolations and models	0.0	0.0	0.0
..Other	0.0	0.0	0.0
Adjustments	-4.0	1.7	-5.7
..Data validation	1.1	0.4	0.7
..Conceptual	-12.2	1.4	-13.6
..Exhaustiveness	7.1	-0.1	7.3
..Balancing	0.0	0.0	0.0
Final estimate	332.3	185.0	147.4

The treatment of mineral exploration

Mineral exploration is treated as GFCF. The estimation methodology for mineral exploration is described in Section 5.10.3.16.

3.9. Manufacturing (NACE Rev. 2 Section C)

Introduction

In 2021, the gross value added of manufacturing was estimated at 4.1 billion euros, which amounted to 13.3% of the GNI (see Table 3.23). The value added of manufacturing was generated mainly by NACE Division 16 (Manufacture of wood and products of wood and cork) which accounted for 22.0% of the total value added in NACE Section C, by Division 25 (Manufacture of fabricated metal products, except machinery and equipment) (12.8%) and by Divisions 10 and 11 (Manufacture of food products and beverages) (11.0%).

Table 3.23 Contribution of NACE Section C to GDP and GNI by NACE Division, 2021

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Manufacture of food products and beverages (10_11)					
output	2,001.4				
intermediate consumption	1,550.1				
value added	451.3	11.0	1.6	1.4	1.5
Manufacture of textiles, wearing apparel and leather products (13_15)					
output	568.5				
intermediate consumption	399.3				
value added	169.2	4.1	0.6	0.5	0.6
Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (16)					
output	3,706.9				
intermediate consumption	2,803.6				
value added	903.3	22.0	3.3	2.9	2.9
Manufacture of paper and paper products (17)					
output	275.9				
intermediate consumption	205.1				
value added	70.8	1.7	0.3	0.2	0.2
Printing and reproduction of recorded media (18)					
output	225.3				
intermediate consumption	146.2				
value added	79.1	1.9	0.3	0.3	0.3
Manufacture of coke and refined petroleum products (19)					
output	330.6				
intermediate consumption	230.0				
value added	100.6	2.5	0.4	0.3	0.3
Manufacture of chemicals and chemical products (20)					
output	573.9				
intermediate consumption	431.6				
value added	142.2	3.5	0.5	0.5	0.5
..of which production of narcotics (E.C.20)					
output	6.0				
intermediate consumption	0.3				
value added	5.6	0.1	0.0	0.0	0.0
Manufacture of basic pharmaceutical products and pharmaceutical preparations (21)					
output	55.9				
intermediate consumption	38.1				
value added	17.8	0.4	0.1	0.1	0.1
Manufacture of rubber and plastic products (22)					
output	567.5				

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
intermediate consumption	397.0				
value added	170.4	4.2	0.6	0.5	0.6
Manufacture of other non-metallic mineral products (23)					
output	640.4				
intermediate consumption	453.7				
value added	186.6	4.6	0.7	0.6	0.6
Manufacture of basic metals (24)					
output	105.8				
intermediate consumption	68.1				
value added	37.8	0.9	0.1	0.1	0.1
Manufacture of fabricated metal products, except machinery and equipment (25)					
output	1,751.0				
intermediate consumption	1,224.4				
value added	526.6	12.8	1.9	1.7	1.7
Manufacture of computer, electronic and optical products (26)					
output	1,287.5				
intermediate consumption	1,039.4				
value added	248.1	6.1	0.9	0.8	0.8
Manufacture of electrical equipment (27)					
output	818.1				
intermediate consumption	602.0				
value added	216.2	5.3	0.8	0.7	0.7
Manufacture of machinery and equipment n.e.c. (28)					
output	555.3				
intermediate consumption	387.8				
value added	167.5	4.1	0.6	0.5	0.5
Manufacture of motor vehicles, trailers and semi-trailers (29)					
output	516.5				
intermediate consumption	419.8				
value added	96.7	2.4	0.4	0.3	0.3
Manufacture of other transport equipment (30)					
output	115.8				
intermediate consumption	84.8				
value added	31.0	0.8	0.1	0.1	0.1
Manufacture of furniture; other manufacturing (31_32)					
output	922.5				
intermediate consumption	640.8				
value added	281.7	6.9	1.0	0.9	0.9
Repair and installation of machinery and equipment (33)					

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
output	557.0				
intermediate consumption	355.2				
value added	201.8	4.9	0.7	0.6	0.7
Total					
output	15,575.8				
intermediate consumption	11,477.1				
value added	4,098.7	100.0	14.9	13.0	13.3

In 2021, the value added of NACE Section C was generated by the non-financial corporations (99.6%) and households (0.4%) sectors; see Table 3.24. The value added of the illegal activity (E.C.20) amounted to 5.7 million euros, which accounted for 0.0% of the GNI.

In the supply and use framework, manufacturing covers 19 market activities in the non-financial corporations sector, 16 market activities in the households sector, and one illegal activity.

Activity	Sector	Type of producer	Source
19 activities	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, PRODCOM, energy and fuel survey, foreign trade statistics, BOP
16 activities	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)
Production of narcotics	S.14	Illegal	NA estimates

Table 3.24 Breakdown of NACE Section C by NACE Division and by institutional sector, 2021
(million euros)

NACE Division	Total	Institutional sector			
		S.11	% of S.11 in division	S.14	% of S.14 in division
Manufacture of food products and beverages (10_11)					
output	2,001.4	1,999.3		2.2	
intermediate consumption	1,550.1	1,548.7		1.4	
value added	451.3	450.6	99.8	0.7	0.2
Manufacture of textiles, wearing apparel and leather products (13_15)					
output	568.5	566.0		2.5	
intermediate consumption	399.3	397.8		1.4	
value added	169.2	168.2	99.4	1.1	0.6
Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (16)					
output	3,706.9	3,702.0		4.9	
intermediate consumption	2,803.6	2,800.7		2.9	
value added	903.3	901.3	99.8	2.0	0.2
Manufacture of paper and paper products (17)					
output	275.9	275.8		0.1	
intermediate consumption	205.1	205.0		0.1	
value added	70.8	70.8	99.9	0.1	0.1
Printing and reproduction of recorded media (18)					
output	225.3	225.1		0.2	
intermediate consumption	146.2	146.2		0.1	
value added	79.1	78.9	99.8	0.1	0.2
Manufacture of coke and refined petroleum products (19)					
output	330.6	330.6		0.0	
intermediate consumption	230.0	230.0		0.0	
value added	100.6	100.6	100.0	0.0	0.0
Manufacture of chemicals and chemical products (20)					
output	573.9	567.9		6.0	
intermediate consumption	431.6	431.3		0.3	
value added	142.2	136.6	96.0	5.6	4.0
..of which production of narcotics (E.C.20)					
output	6.0	0.0		6.0	
intermediate consumption	0.3	0.0		0.3	
value added	5.6	0.0	0.0	5.6	100.0
Manufacture of basic pharmaceutical products and pharmaceutical preparations (21)					
output	55.9	55.9		0.1	
intermediate consumption	38.1	38.1		0.0	

NACE Division	Total	Institutional sector			
		S.11	% of S.11 in division	S.14	% of S.14 in division
value added	17.8	17.8	100.0	0.0	0.0
Manufacture of rubber and plastic products (22)					
output	567.5	567.0		0.4	
intermediate consumption	397.0	396.8		0.3	
value added	170.4	170.2	99.9	0.2	0.1
Manufacture of other non-metallic mineral products (23)					
output	640.4	639.5		0.9	
intermediate consumption	453.7	453.3		0.5	
value added	186.6	186.2	99.8	0.4	0.2
Manufacture of basic metals (24)					
output	105.8	105.7		0.1	
intermediate consumption	68.1	68.0		0.1	
value added	37.8	37.7	99.8	0.1	0.2
Manufacture of fabricated metal products, except machinery and equipment (25)					
output	1,751.0	1,743.9		7.1	
intermediate consumption	1,224.4	1,220.0		4.4	
value added	526.6	523.9	99.5	2.7	0.5
Manufacture of computer, electronic and optical products (26)					
output	1,287.5	1,287.3		0.2	
intermediate consumption	1,039.4	1,039.4		0.1	
value added	248.1	248.0	99.9	0.2	0.1
Manufacture of electrical equipment (27)					
output	818.1	818.1		0.0	
intermediate consumption	602.0	602.0		0.0	
value added	216.2	216.2	100.0	0.0	0.0
Manufacture of machinery and equipment n.e.c. (28)					
output	555.3	554.2		1.1	
intermediate consumption	387.8	387.0		0.8	
value added	167.5	167.1	99.8	0.3	0.2
Manufacture of motor vehicles, trailers and semi-trailers (29)					
output	516.5	516.5		0.0	
intermediate consumption	419.8	419.8		0.0	
value added	96.7	96.7	100.0	0.0	0.0
Manufacture of other transport equipment (30)					
output	115.8	115.7		0.1	
intermediate consumption	84.8	84.8		0.0	
value added	31.0	30.9	99.8	0.1	0.2
Manufacture of furniture; other manufacturing (31_32)					
output	922.5	919.8		2.7	

NACE Division	Total	Institutional sector			
		S.11	% of S.11 in division	S.14	% of S.14 in division
intermediate consumption	640.8	639.3		1.5	
value added	281.7	280.5	99.6	1.2	0.4
Repair and installation of machinery and equipment (33)					
output	557.0	554.0		3.0	
intermediate consumption	355.2	353.7		1.5	
value added	201.8	200.3	99.3	1.5	0.7
Total					
output	15,575.8	15,544.3		31.6	
intermediate consumption	11,477.1	11,461.8		15.3	
value added	4,098.7	4,082.5	99.6	16.2	0.4

Data sources

The annual Structural Business Statistics survey (EKOMAR) is the main data source for estimating output and intermediate consumption in the non-financial corporations sector. PRODCOM survey data are used to compile the industrial output by product. Energy and fuel survey data are used to divide the intermediate consumption of energy and fuels into product groups. The methodologies of data collection and processing for the SBS, PRODCOM and energy and fuel surveys are described in Chapter 10.

Other sources used for estimating output and intermediate consumption include FTS and BOP data from Eesti Pank. Those data sources are used for preparing estimates for direct exports as part of output and for direct imports of goods and services relevant for intermediate consumption. A comparison of data for consistency between various sources at the individual enterprise level is also carried out. In addition, the annual reports of enterprises received from the Business Register are used as well, as they provide useful information for the compilers of NA. For more information, see Chapter 10.

The estimates of intermediate consumption for unincorporated enterprises in the households sector are derived from tax declarations on the business income of sole proprietors received from the Tax and Customs Board (see description in Section 3.19).

The data sources used for estimating illegal activity are described in Chapter 10.

Output

The SBS survey Modules C “Expenses, revenues and profit” and D “Breakdown of turnover” provide the information for the calculation of output (see description in Section 3.9).

The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4. The estimation methodology for unincorporated enterprises in the households sector is described in Section 3.19.

In 2021, the output value of manufacturing activities totalled 15.6 billion euros.

Intermediate consumption

Data for intermediate consumption are obtained from the SBS Module C “Expenses, revenues and profit” on an annual basis and from Module E “Breakdown of expenses on materials, supplies, intermediate goods and services” on a five-yearly basis (2008, 2013, 2018, etc.). The compilation method for intermediate consumption is described in Section 3.9. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

The intermediate consumption of non-financial corporations is estimated in several steps. First, the total amount of intermediate consumption in each activity is calculated on the basis of Module C, which provides information on the following cost categories: raw materials and semi-finished goods, packing materials, maintenance and repair materials, electricity, fuel and energy, water treatment and supply services, purchased services including payments to sub-contractors, payments for rental and operational leasing of goods and payments for agency workers, business services and other operating expenses. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

In national accounts, ITGS and BOP data are used as sources supplementary to SBS in order to divide intermediate consumption between more detailed product groups and to calculate the imports part of intermediate consumption. In a small open economy like Estonia where essential amounts of raw materials are directly imported by the enterprises using them, ITGS are an important data source. For the imports of goods, detailed information by product group according to the Combined Nomenclature is available at the enterprise level. For goods, estimates are provided at the level of 100 SUT product groups. For the imports of services, detailed BOP data are used.

The estimates of intermediate consumption for unincorporated enterprises in the households sector are derived from tax declarations on the business income of sole proprietors received from the Tax and Customs Board (see description in Section 3.19).

Final reconciliation by industry and by product group is made in the framework of supply and use tables.

Illegal production

In manufacturing, illegal production includes the production of drugs. The output of drugs was estimated at 6.0 million euros in 2021 and the distributive margin at 39.19 million euros (see the description in Chapter 7).

Adjustments made to basic data

A number of adjustments are made to the initial estimates of output and intermediate consumption for differences in concepts, exhaustiveness and when balancing the supply and use tables. The total amount of adjustments made to the value added of manufacturing in 2021 amounted to -575.4 million euros or -12.3% compared to initial estimates (see Table 3.25).

Table 3.25 NACE Section C by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	16,066.3	11,392.2	4,674.1
..Surveys and censuses	0.0	0.0	0.0
..Administrative records	10.9	6.6	4.3

	Output	Intermediate consumption	Gross value added
..Combined data	16,055.4	11,385.6	4,669.8
..Extrapolations and models	0.0	0.0	0.0
..Other	0.0	0.0	0.0
Adjustments	-490.5	84.9	-575.4
..Data validation	19.7	-53.6	73.4
..Conceptual	-776.7	93.8	-870.5
..Exhaustiveness	266.4	44.7	221.7
..Balancing	0.0	0.0	0.0
Final estimate	15,575.8	11,477.1	4,098.7

3.10. Electricity, gas, steam and air conditioning supply (NACE Rev. 2 Section D)

Introduction

The value added of electricity, gas, steam and air conditioning supply in 2021 was 895.1 million euros at current prices which amounted to 2.9% of the GNI (see Table 3.26).

Table 3.26 Contribution of NACE Section D to GDP and GNI, 2021

NACE Section	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Electricity, gas, steam and air conditioning supply (35)					
output	1,841.6				
intermediate consumption	946.6				
value added	895.1	100.0	3.3	2.8	2.9

In the non-financial corporations sector, three activities are distinguished that cover enterprises engaged in the production and distribution of electricity, the manufacture and distribution of gas, steam and hot water. In the households sector, two market industries are specified, but their share in the total production of the energy sector is negligible.

Activity	Sector	Type of producer	Source
Electric power generation, transmission and distribution	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, PRODCOM, energy and fuel survey, foreign trade statistics, BOP
Manufacture of gas; distribution of gaseous fuels through mains	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, PRODCOM, energy and fuel survey, foreign trade statistics, BOP
Steam and air conditioning supply	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, PRODCOM, energy and fuel survey, foreign trade statistics, BOP
Electric power generation, transmission and distribution	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)

Activity	Sector	Type of producer	Source
Steam and air conditioning supply	S.14	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, PRODCOM, energy and fuel survey, foreign trade statistics, BOP

In 2021, the value added of NACE Section D was generated by the non-financial corporations (100.0%) and households (0.0%) sectors; see Table 3.27.

Table 3.27 Breakdown of NACE Section D by institutional sector, 2021
(million euros)

NACE Section	Total	Institutional sector			
		S.11	% of S.11 in division	S.14	% of S.14 in division
Electricity, gas, steam and air conditioning supply (35)					
output	1,841.6	1,841.6		0.01	
intermediate consumption	946.6	946.6		0.00	
value added	895.1	895.1	100.0	0.00	0.0

Data sources

The annual Structural Business Statistics survey is the main data source for estimating output and intermediate consumption in non-financial corporations. Energy and fuel survey data are used to divide the intermediate consumption of energy and fuels into product groups. The methodologies of data collection and processing for the SBS and energy and fuel surveys are described in Chapter 10

Other sources used for estimating output and intermediate consumption include FTS and BOP data from Eesti Pank. Those data sources are used for preparing estimates for direct exports as part of output and for direct imports of goods and services relevant for intermediate consumption. A comparison of data for consistency between various sources at the individual enterprise level is also carried out. In addition, the annual reports of enterprises received from the Business Register are used as well, as they provide useful information for the compilers of NA. For more information, see Chapter 10.

Output

The SBS survey Modules C “Expenses, revenues and profit” and D “Breakdown of turnover” provide the information for the calculation of output (see description in Section 3.9).

The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4. The estimation methodology for unincorporated enterprises in the households sector is described in Section 3.19.

Intermediate consumption

The compilation method for intermediate consumption is described in Section 3.9. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

Adjustments made to basic data

A number of adjustments are made to output and intermediate consumption for differences in concepts, exhaustiveness and when balancing the supply and use tables. The total adjustments made to the value added of electricity, gas, steam and air conditioning supply in 2021 amounted to -1,184.2 million euros or -57.0% compared to initial estimates (see Table 3.36).

Table 3.28 NACE Section D by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	2,962.4	883.1	2,079.3
..Surveys and censuses	0.0	0.0	0.0
..Administrative records	0.0	0.0	0.0
..Combined data	2,962.4	883.1	2,079.3
..Extrapolations and models	0.0	0.0	0.0
..Other	0.0	0.0	0.0
Adjustments	-1,120.7	63.5	-1,184.2
..Data validation	98.7	58.4	40.3
..Conceptual	-1,220.3	5.5	-1,225.8
..Exhaustiveness	29.8	-0.4	30.2
..Balancing	-28.9	0.0	-28.9
Final estimate	1,841.6	946.6	895.1

3.11. Water supply; sewerage, waste management and remediation activities (NACE Rev. 2 Section E)

Introduction

The value added of water supply, sewerage, waste management and remediation activities in 2021 was 229.7 million euros at current prices with a 0.7% share in the GNI (see Table 3.29).

Table 3.29 Contribution of NACE Section E to GDP and GNI by NACE Division, 2021

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Water collection, treatment and supply (36)					
output	129.0				
intermediate consumption	48.6				
value added	80.4	35.0	0.3	0.3	0.3
Sewerage; waste collection, treatment and disposal activities; materials recovery; remediation activities and other waste management services (37_39)					
output	812.1				
intermediate consumption	662.8				
value added	149.3	65.0	0.5	0.5	0.5
Total					
output	941.1				
intermediate consumption	711.4				
value added	229.7	100.0	0.8	0.7	0.7

In the non-financial corporations sector, two activities are distinguished that cover enterprises engaged in the collection and distribution of water and in sewerage services, sewage sludge, waste collection, treatment and disposal services, materials recovery services, remediation services and other waste management services. In the households sector, two market industries in NACE Section E are specified.

Activity code	Activity	Sector	Type of producer	Source
M.E.36	Water collection, treatment and supply	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, PRODCOM, energy and fuel survey, foreign trade statistics, BOP
M.E.37_39	Sewerage; waste collection, treatment and disposal activities	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, PRODCOM, energy and fuel survey, foreign trade statistics, BOP
H.E.36	Water collection, treatment and supply	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)
H.E.37_39	Sewerage; waste collection, treatment and disposal activities	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)

Value added was mainly generated by non-financial corporations (99.9%); see Table 3.30.

Table 3.30 Breakdown of NACE Section E by NACE Division and by institutional sector, 2021
(million euros)

NACE Division	Total	Institutional sector			
		S.11	% of S.11 in division	S.14	% of S.14 in division
Water collection, treatment and supply (36)					
output	129.0	129.0		0.0	
intermediate consumption	48.6	48.6		0.0	
value added	80.4	80.4	100.0	0.0	0.0
Sewerage; waste collection, treatment and disposal activities; materials recovery; remediation activities and other waste management services (37_39)					
output	812.1	811.6		0.5	
intermediate consumption	662.8	662.5		0.3	
value added	149.3	149.1	99.8	0.2	0.2
Total					
output	941.1	940.6		0.5	
intermediate consumption	711.4	711.1		0.3	
value added	229.7	229.5	99.9	0.2	0.1

Data sources

The annual Structural Business Statistics survey is the main data source for estimating output and intermediate consumption in non-financial corporations. Energy and fuel survey data are used to divide the intermediate consumption of energy and fuels into product groups. The methodologies of data collection and processing for the SBS and energy and fuel surveys are described in Chapter 10.

Other sources used for estimating output and intermediate consumption include FTS and BOP data from Eesti Pank. Those data sources are used for preparing estimates for direct exports as part of output and for direct imports of goods and services relevant for intermediate consumption. A comparison of data for consistency between various sources at the individual enterprise level is also carried out. In addition, the annual reports of enterprises received from the Business Register are used as well, as they provide useful information for the compilers of NA. For more information, see in Chapter 10.

The estimates of intermediate consumption for unincorporated enterprises in the households sector are derived from the tax declarations on the business income of sole proprietors received from the Tax and Customs Board (see the description in Section 3.19). According to this administrative source, the number of registered sole proprietors in NACE Section E was 15, which accounted for 0.1% of the total number of sole proprietors in 2021.

Output

The SBS survey Modules C “Expenses, revenues and profit” and D “Breakdown of turnover” provide the information for the calculation of output (see description in Section 3.9).

The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4. The estimation methodology for unincorporated enterprises in the households sector is described in Section 3.19.

Intermediate consumption

The compilation method for intermediate consumption is described in Section 3.9. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

Adjustments made to basic data

A number of adjustments are made to output and intermediate consumption for differences in concepts, exhaustiveness and when balancing the supply and use tables. The total amount of adjustments made to the value added of water supply, sewerage, waste management and remediation activities in 2021 was 8.3 million euros or 3.7% compared to initial estimates (see Table 3.31).

Table 3.31 NACE Section E by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	952.6	731.2	221.5
..Surveys and censuses	0.0	0.0	0.0
..Administrative records	0.2	0.1	0.1
..Combined data	952.4	731.0	221.4
..Extrapolations and models	0.0	0.0	0.0
..Other	0.0	0.0	0.0

	Output	Intermediate consumption	Gross value added
Adjustments	-11.5	-19.8	8.3
..Data validation	4.8	-17.6	22.4
..Conceptual	-21.0	-1.9	-19.1
..Exhaustiveness	4.7	-0.3	5.0
..Balancing	0.0	0.0	0.0
Final estimate	941.1	711.4	229.7

3.12. Construction (NACE Rev. 2 Section F)

Introduction

In 2021, the gross value added in construction activities was estimated at 1.8 billion euros, which amounted to 5.9% of the GNI (see Table 3.32).

Table 3.32 Contribution of NACE Section F to GDP and GNI, 2021

NACE Section	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Construction (41_43)					
output	4,873.0				
intermediate consumption	3,062.8				
value added	1,810.2	100.0	6.6	5.8	5.9

In NACE Section F, one activity of the non-financial corporations sector is distinguished and two activities of the households sector are specified, of which one activity for own final use.

Activity code	Activity	Sector	Type of producer	Source
M.F.41_43	Construction	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, PRODCOM, energy and fuel survey, foreign trade statistics, BOP
H.F.41_43	Construction	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)
O.F.41	Construction	S.14	For own final use	NA estimates

The value added of construction was generated by the non-financial corporations sector (93.7%) and the households sector (6.3%); see Table 3.33.

Table 3.33 Breakdown of NACE Section F by NACE Division and by institutional sector, 2021
(million euros)

NACE Section	Total	Institutional sector			
		S.11	% of S.11 in division	S.14	% of S.14 in division
Construction (41_43)					
output	4,873.0	4,610.2		262.8	
intermediate consumption	3,062.8	2,914.4		148.4	
value added	1,810.2	1,695.8	93.7	114.4	6.3

Data sources

The annual Structural Business Statistics survey is the main data source for estimating output and intermediate consumption in non-financial corporations.

Energy and fuel survey data are used to divide the intermediate consumption of energy and fuels into product groups. The methodologies of data collection and processing for the SBS and energy and fuel surveys are described in Chapter 10.

Other sources used for estimating output and intermediate consumption include FTS and BOP data from Eesti Pank. Those data sources are used for preparing estimates for direct exports as part of output and for direct imports of goods and services relevant for intermediate consumption. A comparison of data for consistency between various sources at the individual enterprise level is also carried out. In addition, the annual reports of enterprises from the Business Register are used as well, as they provide useful information for the compilers of NA. For more information, see Chapter 10.

For unincorporated enterprises in the households sector, tax declarations on the business income of sole proprietors received from the Tax and Customs Board are the main source. According to this administrative source, the number of registered sole proprietors engaged in construction activities (NACE Section F) was 492, which amounted to 2.5% of the total number of sole proprietors in 2021.

Output

The estimation methodology used for unincorporated enterprises is described in Section 3.19.

Intermediate consumption

The compilation method for intermediate consumption is described in Section 3.9. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

Adjustments made to output and intermediate consumption

A number of adjustments are made for differences in concepts, exhaustiveness and when balancing the supply and use tables. The total amount of adjustments made to the value added of construction in 2021 amounted to -1,950.7 million euros or -51.9% compared to initial estimates (see Table 3.34).

Table 3.34 NACE Section F by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	6,584.4	2,823.5	3,760.9
..Surveys and censuses	0.0	0.0	0.0
..Administrative records	9.8	4.5	5.3
..Combined data	6,574.7	2,819.0	3,755.6
..Extrapolations and models	0.0	0.0	0.0
..Other	0.0	0.0	0.0
Adjustments	-1,711.5	239.2	-1,950.7
..Data validation	42.6	-14.3	57.0
..Conceptual	-2,138.1	87.6	-2,225.7
..Exhaustiveness	384.0	165.9	218.0
..Balancing	0.0	0.0	0.0
Final estimate	4,873.0	3,062.8	1,810.2

Own-account construction and major repair of dwellings by households

The compilation method for the own-account construction and major repair of dwellings by households is described in Section 7.1.3.3.3.

Recommendations from the GNP Committee Task Force on Construction (CPNB 202) related to exhaustiveness

The estimates of construction output are compiled within a regular and comprehensive supply and use framework. On the supply side, the estimates of construction output and value added are based on the production approach, with adjustments made for exhaustiveness. On the use side, expenditure data on new building and structural works are derived from primary statistical and administrative sources. Final reconciliation is made in the SUT framework.

To achieve exhaustive and robust estimates of investments in dwellings, Statistics Estonia is developing an alternative method for estimating the construction sector based on statistics from the State Register of Construction Works, the Land Board and the Household Budget Survey. Data on the area of constructed, reconstructed, renovated and enlarged dwellings come from the State Register of Construction Works. The market price of new dwellings is derived from the Land Board's report on real estate transactions. The Household Budget Survey is a source of information on expenditures on major improvements undeclared in the register.

The volume indices of the production of cement and other non-metallic mineral products (NACE Division 23) from PRODCOM statistics are used for validating the growth of construction output.

A comparison between total revenue from subcontracting activities and total expenditure on subcontracting in the construction industry is explained below.

The SBS survey collects information on subcontracting in the construction industry on the cost side.¹³ Data on the expenditure on subcontracting are obtained from Module C “Expenses, revenues and profit”.

The sales of construction activities accounted for 6.6 billion euros in 2021. 2.0 billion euros was reported for purchased subcontracting in Estonia. The cost of purchased subcontracting work is a variable of accounting data that is used for estimating the production of the construction industry in national accounts and construction statistics. The quality of the data on purchased subcontracting is checked for consistency with the variable “Construction production in Estonia made by construction enterprises’ own staff” collected via Module O “Construction activities in Estonia by construction enterprises’ own staff by type of construction”. As for the turnover of subcontracting, it is not possible to link this variable with other variables collected in the SBS survey in order to check the quality of these data.

For repairs and improvements made to dwellings by households, see the description under “Own-account construction and major repairs of dwellings by households” in this section above.

Information on the exports of construction services is collected via surveys carried out by SE. For more information, see the description in Section 5.14. Construction carried out abroad for a period less than one year is recorded as domestic output.

3.13. Wholesale and retail trade; repair of motor vehicles and motorcycles (NACE Rev. 2 Section G)

Introduction

This section provides information on the distributive trade sector. In 2021, value added by the distributive trade sector accounted for 3.5 billion euros or 11.2% of the GNI (see Table 3.35). Illegal activities made contributions in the amount of 76.7 million euros, which corresponded to 0.2% of the GNI.

Table 3.35 Contribution of NACE Section G to GDP and GNI by NACE Division, 2021

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Wholesale and retail trade and repair of motor vehicles and motorcycles (45)					
output	937.3				
intermediate consumption	475.2				
value added	462.1	13.4	1.7	1.5	1.5
Wholesale trade, except of motor vehicles and motorcycles (46)					
output	3,212.4				
intermediate consumption	1,557.8				
value added	1,654.5	47.9	6.0	5.3	5.4

¹³ It should be noted that, as a producer of official statistics in a small country, Statistics Estonia has applied for derogations for the transmission of a number of SBS variables. Data on the turnover of subcontracting are not required to be transmitted to Eurostat since the accounting year 2007.

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Retail trade, except of motor vehicles and motorcycles (47)					
output	2,393.2				
intermediate consumption	1,054.3				
value added	1,338.9	38.7	4.9	4.3	4.4
..of which smuggling and illegal trade of alcohol, sugar, tobacco and motor fuels (E.G.471)					
output	42.5				
intermediate consumption	0.1				
value added	42.4	1.2	0.2	0.1	0.1
..of which distribution of narcotics and illegal trade of medicaments (E.G.472)					
output	39.3				
intermediate consumption	4.9				
value added	34.4	1.0	0.1	0.1	0.1
Total					
output	6,542.9				
intermediate consumption	3,087.3				
value added	3,455.6	100.0	12.6	11.0	11.2

In the SUT framework, the trade sector is divided into 6 market activities belonging to the non-financial corporations sector and households sector, and two illegal activities, that is, the distribution of drugs and illegal trade of medicaments, and the smuggling of alcohol, sugar, tobacco and fuels (see the table below).

Activity code	Activity	Sector	Type of producer	Source
M.G.45	Wholesale and retail trade and repair of motor vehicles and motorcycles	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, energy and fuel survey, foreign trade statistics, BOP
M.G.46	Wholesale trade, except of motor vehicles and motorcycles	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, energy and fuel survey, foreign trade statistics, BOP
M.G.47	Retail trade, except of motor vehicles and motorcycles	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, energy and fuel survey, foreign trade statistics, BOP
H.G.45	Wholesale and retail trade and repair of motor vehicles and motorcycles	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)
H.G.46	Wholesale trade, except of motor vehicles and motorcycles	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)
H.G.47	Retail trade, except of motor vehicles and motorcycles	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)
E.G.471	Smuggling and illegal trade of alcohol, sugar, tobacco and motor fuels	S.11	Illegal	NA estimates

Activity code	Activity	Sector	Type of producer	Source
E.G.472	Distribution of narcotics and illegal trade of medicaments	S.14	Illegal	NA estimates

NACE Division 45 covers units engaged in the trade of motor vehicles as well as in the maintenance and repair of motor vehicles and motorcycles. Division 46 includes units engaged in wholesale trade, the activities of commission agents, commodity brokers, other intermediaries and merchanting.

The value added of NACE Rev. 2 Section G was generated by corporations (98.6%) and households (1.4%) (see Table 3.36) and divided into 5 activities. In retail trade, the contribution of the households sector amounted to 3.2% of the value added in Division 47.

Table 3.36 Breakdown of NACE Section G by NACE Division and by institutional sector, 2021
(million euros)

NACE Division	Total	Institutional sector			
		S.11	% of S.11 in division	S.14	% of S.14 in division
Wholesale and retail trade and repair of motor vehicles and motorcycles (45)					
output	937.3	932.8		4.5	
intermediate consumption	475.2	473.0		2.1	
value added	462.1	459.7	99.5	2.4	0.5
Wholesale trade, except of motor vehicles and motorcycles (46)					
output	3,212.4	3,208.4		3.9	
intermediate consumption	1,557.8	1,556.1		1.7	
value added	1,654.5	1,652.3	99.9	2.2	0.1
Retail trade, except of motor vehicles and motorcycles (47)					
output	2,393.2	2,339.4		53.8	
intermediate consumption	1,054.3	1,043.8		10.5	
value added	1,338.9	1,295.6	96.8	43.4	3.2
..of which smuggling and illegal trade of alcohol, sugar, tobacco and motor fuels (E.G.471)					
output	42.5	42.5		0.0	
intermediate consumption	0.1	0.1		0.0	
value added	42.4	42.4	100.0	0.0	0.0
..of which distribution of narcotics and illegal trade of medicaments (E.G.472)					
output	39.3	0.0		39.3	
intermediate consumption	4.9	0.0		4.9	
value added	34.4	0.0	0.0	34.4	100.0
Total					
output	6,542.9	6,480.6		62.3	
intermediate consumption	3,087.3	3,072.9		14.3	
value added	3,455.6	3,407.6	98.6	48.0	1.4

Data sources

The output, intermediate consumption and value added of the non-financial corporations sector are calculated based on the data of the annual Structural Business Statistics survey. Secondary trade activity by enterprises in other market and non-market branches is distinguished in the basic source but not transferred to NACE Rev. 2 Section G.

No ad-hoc surveys are made on trade margins since 1997. The data required for the compilation of margin matrices are gathered by the SBS survey. The data collection and processing methodology for SBS is described in Chapter 10.

The balance of payment statistics are the main data source for estimating merchanting. Merchanting activities are covered by a regular survey which is carried out by Eesti Pank and enables identifying the respective enterprises and calculating their output.

Other sources used for estimating intermediate consumption include FTS on imports of goods, BOP data on the imports of services, the energy and fuel survey on fuel consumption by product. In addition, the annual reports of enterprises from the Business Register are used as well, as they provide useful information for the compilers of NA. For more information, see Chapter 10.

For sole proprietors, the administrative data on the tax declarations on business income from the Tax and Customs Board are used. According to this administrative source, the number of registered sole proprietors in trade activities belonging to NACE Rev. 2 Section G was 1,856, which made up 9.4% of the total number of sole proprietors in 2021.

The data sources used for estimating illegal activity are described in Chapter 7.

Output

Module D “Breakdown of turnover” of the annual SBS survey provides information about turnover by kind of activity for calculating total output by industry and by product. Module D for NACE Section G is presented in Table 3.37 below.

Table 3.37 Module D “Breakdown of turnover” for trade industry (NACE Section G)

Breakdown of turnover	NACE code
Total turnover	D_0010
Wholesale and retail trade turnover:	D_45_47
..Sale of motor vehicles	D_451
.... <i>sale of motor vehicles, parts and accessories</i>	D_451_4531
..Maintenance and repair of motor vehicles	D_452
.... <i>parts and accessories</i>	D_4532
..Commission trade	D_461
..Wholesale of goods, of which	D_462_9
.... <i>agricultural raw materials and live animals</i>	D_462
.... <i>other products</i>	D_462_99
.... <i>food, beverages and tobacco</i>	D_463
.... <i>household goods</i>	D_464
.... <i>information and communication equipment, other machinery, equipment, supplies</i>	D_465_466
.... <i>non-agricultural intermediate products, waste and scrap</i>	D_467

Breakdown of turnover	NACE code
.... <i>fuel</i>	D_46712
..Retail trade of goods	D_47
..... <i>foodstuffs</i>	D_4721_9
..... <i>alcoholic beverages</i>	D_4725_2
..... <i>tobacco products</i>	D_4726
..... <i>motor fuel</i>	D_473
..... <i>other manufactured goods</i>	D_474_479
..... <i>clothing, footwear, fabrics</i>	D_4751_477
..... <i>agricultural raw materials and live animals</i>	D_4776
..... <i>other goods</i>	D_47999

Wholesale sales are defined as revenue from the resale of goods to retailers, agricultural and industrial users, institutions and organisations, or to other wholesalers for resale, own use or for industrial consumption. Commission trade is a part of turnover derived from the intermediation of goods and corresponds to fees on purchases made on behalf of third parties. Merchanting is defined as the purchase of goods by a resident of the compiling economy from a non-resident and the subsequent resale of the goods to another non-resident. Retail trade sales are considered as sales revenue from the resale of goods by stores, kiosks, outlets and mail order houses predominantly to households as final consumers.

The output of wholesale and retail trade services is measured by the trade margins realised on the goods they purchase for resale. The trade margin is calculated as trade turnover obtained from the SBS Module D “Breakdown of turnover” minus the costs of goods purchased for resale obtained from Module C “Expenses, revenues and profit”.

As the data used are collected from sources that closely follow general accounting principles, the inventories of goods held for resale are valued at acquisition cost or net realisable value, whichever is lowest. Holding gains are calculated based on this book value of inventories and are deducted from both changes in inventories and output, which includes trade margins. The following Table 3.38 shows that holding gains are excluded from the trade margins in NACE Rev. 2 Section G, and that eventual holding losses are included in the trade margins.

Table 3.38 Holding gains or losses excluded from / included in the trade margins (NACE Rev. 2 Section G), 2021 (million euros)

Sector	Activities (NACE Rev. 2)	P.1 components* except HG	HG_P522	HG_P523	HG_P524	P.1
		1	2	3	4	
S.11&S.14	G.45	978.7	-0.2	0.0	-41.3	937.3
S.11&S.14	G.46	3,289.4	-10.0	-0.3	-66.9	3,212.4
S.11&S.14	G.47	2,440.2	0.0	0.0	-46.9	2,393.2
S.11&S.14	G.45–47	6,708.3	-10.1	-0.3	-155.0	6,542.9

*Note: *Components include D.31, FISIM, Income, P.111 to P.119, P.12, P.13, originals, R&D, own-account software, VAT_fraud, Balancing.*

For a more detailed description of how holding gains are calculated, refer to Section 5.115.11.

The estimation methodology used for sole proprietors is described in Section 3.19.

Intermediate consumption

The compilation method for intermediate consumption is described in Section 3.9. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

Adjustments made to basic data

A number of adjustments are made to output and intermediate consumption for differences in concepts, exhaustiveness and when balancing the supply and use tables. The total amount of adjustments made to the value added of trade in 2021 was -25,731.1 million euros or -88.2% compared to initial estimates (see Table 3.39).

Table 3.39 NACE Section G by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	32,287.4	3,098.7	29,188.7
..Surveys and censuses	0.0	0.0	0.0
..Administrative records	15.7	6.8	8.9
..Combined data	32,271.7	3,092.0	29,179.8
..Extrapolations and models	0.0	0.0	0.0
..Other	0.0	0.0	0.0
Adjustments	-25,744.6	-11.5	-25,733.1
..Data validation	80.4	24.8	55.6
..Conceptual	-26,051.9	-41.1	-26,010.8
..Exhaustiveness	226.6	4.8	221.8
..Balancing	0.2	0.0	0.2
Final estimate	6,542.9	3,087.3	3,455.6

Recommendations from the GNP Committee Task Force on Distribution

This subsection provides information on how the recommendations from the GNP Committee Task Force on Distribution (CPNB 205) related to exhaustiveness are applied.

Independent estimates for trade margins from the demand and the supply sides are produced in the SUT framework on an annual basis and are checked against each other for validation purposes. Our estimation approach is explained in more detail in Chapter 6 (6.2.1).

The turnover of retail trade is compared with the tradable consumption of households, and consistency between the two is ensured. A more detailed description is provided in Section 5.7.2.

Starting from 2012, trade margins for the general government sector are calculated as revenue from the sale of goods purchased for resale less costs of these goods. Data are obtained from PSFS. A distinction between wholesale and retail trade is made on the basis of the counterpart sector. Where the households sector (S.14) is the counterpart, the amounts are recorded as the retail trade margin (2.G.47), otherwise as the wholesale trade margin (2.G.462). The trade activities of non-business organisations classified in the NPISH sector are estimated on the basis of the non-profit organisations survey, where data on the sale of goods are collected and

included in the output estimate as the retail trade margin (2.G.47), assumed as 5% of the sales of goods.

The SBS survey is the main data source for estimating the repairs of motor vehicles. This applies to both the production and the expenditure side.

Illegal activities

Estimates made for illegal trade activities, such as the smuggling of alcohol, tobacco and fuels (E.G.471) and the distribution of narcotics and the smuggling of medicines (E.G.472), are described in Chapter 7.

3.14. Transportation and storage (NACE Rev. 2 Section H)

Introduction

The transport and storage sector has an important role to perform in the Estonian economy. An open economy, excellent transportation links and a central location in the Baltic Sea region make Estonia an ideal base for production, distribution and connection.

The value added of Section H of NACE Rev. 2 accounted for 1.8 billion euros or 5.8% of the GNI in 2021 (see Table 3.40).

Table 3.40 Contribution of NACE Section H to GDP and GNI by NACE Division, 2021

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Land transport and transport via pipelines (49)					
output	1,957.6				
intermediate consumption	1,208.4				
value added	749.2	42.1	2.7	2.4	2.4
Water transport (50)					
output	293.5				
intermediate consumption	185.7				
value added	107.8	6.1	0.4	0.3	0.4
Air transport (51)					
output	167.9				
intermediate consumption	147.7				
value added	20.2	1.1	0.1	0.1	0.1
Warehousing and support activities for transportation (52)					
output	2,673.0				
intermediate consumption	1,884.2				
value added	788.8	44.3	2.9	2.5	2.6
Postal and courier activities (53)					
output	323.1				
intermediate consumption	208.0				
value added	115.1	6.5	0.4	0.4	0.4
Total					
output	5,415.1				
intermediate consumption	3,634.0				

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
value added	1,781.1	100.0	6.5	5.7	5.8

In the non-financial corporations sector, NACE Rev. 2 Section H is subdivided into eight activities. In the households sector, six market industries are specified.

In the general government sector, NACE Rev. 2 Section H includes four activities: passenger rail transport (N.H.491), passenger land transport (N.H.4931), water transport (N.H.50) and support activities for transportation (N.H.52).

The passenger land transport activity (N.H.4931) has been included since 2013. Until the middle of 2012, the main providers of passenger transport services in Tallinn were Tallinn Tram and Trolleybus Company (TTTK AS) and Tallinn Bus Company (TAK AS), which were considered as market producers and classified into the non-financial corporations sector (S.11). In the middle of 2012, the two public companies were reorganised into one unit – Tallinna Linnatransport AS (TLT) – which in turn became the main provider of public transport services in Tallinn. In national accounts, TLT was reclassified from sector S.11 to the general government sector S.13 in 2013. The reasoning for such a classification was as follows: (1) about 95% of the revenues of the company are received from the city budget, and the city government controls the company very directly on the strategic level; (2) there is virtually no competition provided by private sector companies and therefore it is difficult to judge whether the tariff rates agreed in the contracts are based on competitive conditions.

The passenger rail transport activity (N.H.491) was introduced in 2014, as from 1 January 2014 passenger transport by rail is provided by a government sector unit (AS Eesti Liinirongid) after the loss of competition between passenger transport operators. Before 2014, there were two railway operators providing passenger transport and both were classified in sector S.11.

The water transport activity (N.H.50) was added in 2016. Since that year, the main operator of passenger transport on water between the mainland and the larger islands of Hiiumaa, Muhu and Saaremaa (TS Laevad OÜ) is a government sector unit after the reclassification of subsidies paid to that unit from subsidies on products to subsidies on production.

The support activities for transportation activity (N.H.52) has been included since 2019 (AS Eesti Raudtee).

Activity code	Activity	Sector	Type of producer	Source
M.H.491	Passenger rail transport, interurban; freight rail transport	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, energy and fuel survey, foreign trade statistics, BOP
N.H.491	Passenger rail transport, interurban	S.13	Non-market	PSFS system
M.H.4931	Other passenger land transport, except taxi operation	S.11	Market	As S.11
N.H.4931	Passenger land transport	S.13	Non-market	As S.13

Activity code	Activity	Sector	Type of producer	Source
H.H.4931	Other passenger land transport, except taxi operation	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)
M.H.4932	Taxi operation	S.11	Market	As S.11
H.H.4932	Taxi operation	S.14	Market	As S.14
M.H.494	Freight transport by road and removal services; transport via pipeline	S.11	Market	As S.11
H.H.494	Freight transport by road and removal services; transport via pipeline	S.14	Market	As S.14
M.H.50	Water transport	S.11	Market	As S.11
N.H.50	Water transport	S.13	Non-market	As S.13
H.H.50	Water transport	S.14	Market	As S.14
M.H.51	Air transport	S.11	Market	As S.11
M.H.52	Warehousing and support activities for transportation	S.11	Market	As S.11
N.H.52	Warehousing and support activities for transportation	S.13	Non-market	As S.13
H.H.52	Warehousing and support activities for transportation	S.14	Market	As S.14
M.H.53	Postal and courier activities	S.11	Market	As S.11
H.H.53	Postal and courier activities	S.14	Market	As S.14

The value added of NACE Rev. 2 Section H was generated by corporations (91.1%), the general government (7.3%) and households (1.6%); see Table 3.41.

Table 3.41 Breakdown of NACE Section H by NACE Division and by institutional sector, 2021.

(million euros)

NACE Division	Total	Institutional sector					
		S.11	% of S.11 in division	S.13	% of S.13 in division	S.14	% of S.14 in division
Land transport and transport via pipelines (49)							
output	1,957.6	1,765.3		139.1		53.2	
intermediate consumption	1,208.4	1,124.5		58.3		25.6	
value added	749.2	640.8	85.5	80.8	10.8	27.6	3.7
Water transport (50)							
output	293.5	268.0		25.5		0.1	
intermediate consumption	185.7	174.3		11.4		0.0	
value added	107.8	93.7	86.9	14.0	13.0	0.0	0.0
Air transport (51)							
output	167.9	167.9		0.0		0.0	
intermediate consumption	147.7	147.7		0.0		0.0	
value added	20.2	20.2	100.0	0.0	0.0	0.0	0.0
Warehousing and support activities for transportation (52)							
output	2,673.0	2,624.4		47.2		1.5	
intermediate consumption	1,884.2	1,870.9		12.4		0.9	
value added	788.8	753.5	95.5	34.7	4.4	0.6	0.1
Postal and courier activities (53)							
output	323.1	320.6		0.0		2.5	
intermediate consumption	208.0	206.6		0.0		1.3	
value added	115.1	114.0	99.0	0.0	0.0	1.1	1.0
Total							
output	5,415.1	5,146.2		211.7		57.2	
intermediate consumption	3,634.0	3,524.0		82.2		27.9	
value added	1,781.1	1,622.2	91.1	129.6	7.3	29.3	1.6

Data sources

The output, intermediate consumption and value added of the non-financial corporations sector are calculated based on data from the annual Structural Business Statistics survey. The SBS data collection and processing methodologies are described in Chapter 10.

Information on transport subsidies is gathered from the PSFS. These data are compared with SBS data on subsidies at the individual enterprise level.

In the general government sector, the main data source used for output is the PSFS system. The methodology for estimating non-market output is the same as for NACE Section O (see Section 3.21).

Other sources for the estimation of output and intermediate consumption include BOP statistics on the export and import of services, FTS on the imports of goods, and the energy and fuel

survey on fuel consumption by product. In addition, the annual reports of enterprises from the Business Register are used, as they provide useful information for the compilers of NA. For more information, see Chapter 10.

Tax declarations on the business income of sole proprietors received from the Tax and Customs Board are the main source of data on unincorporated enterprises. According to this administrative source, the number of registered sole proprietors engaged in transport and storage activities was about 1,798 or 9.1% of the total number of sole proprietors in 2021. Administrative tax declaration data are the main source for estimating the provision of taxi services by sole proprietors. It is known that taxi services are mainly provided by sole proprietors. Taxi enterprises in sector S.11 mainly provide booking and management services for taxi calls.

Output

SBS survey Module D “Breakdown of turnover” provides information on the revenue from passenger, freight, mail and other transportation services by means of transport, on warehousing and storage services, supporting and auxiliary transportation services, postal and courier services, and on revenue from other activities at the level of 2-digit codes based on NACE Rev. 2.

The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

Intermediate consumption

The compilation method for intermediate consumption is described in Section 3.9. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

Adjustments made to basic data

A number of adjustments to output and intermediate consumption are made for differences in concepts, exhaustiveness and when balancing the supply and use tables. The total amount of adjustments made to the value added of transport and storage in 2021 amounted to -95.4 million euros or -5.1% compared to initial estimates (see Table 3.42).

Table 3.42 NACE Section H by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	5,611.4	3,735.0	1,876.4
..Surveys and censuses	0.0	0.0	0.0
..Administrative records	213.9	108.0	105.9
..Combined data	5,353.4	3,627.0	1,726.4
..Extrapolations and models	44.1	0.0	44.1
..Other	0.0	0.0	0.0
Adjustments	-196.3	-101.0	-95.4
..Data validation	6.6	-85.8	92.3
..Conceptual	-279.2	-22.1	-257.1
..Exhaustiveness	76.2	6.8	69.3
..Balancing	0.1	0.0	0.1
Final estimate	5,415.1	3,634.0	1,781.1

3.15. Accommodation and food service activities (NACE Rev. 2 Section I)

Introduction

This section describes the estimates for the HORECA sector, which covers hotels, restaurants, bars, canteens and catering. In national accounts, estimates for this sector are based on a business statistics approach.

The value added of NACE Rev. 2 Section I amounted to 347.7 million euros and 1.1% of the GNI in 2021 (see Table 3.43).

Table 3.43 Contribution of NACE Section I to GDP and GNI, 2021

NACE Section	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Accommodation and food service activities (55_56)					
output	868.6				
intermediate consumption	521.0				
value added	347.7	100.0	1.3	1.1	1.1

In the SUT framework, NACE Rev. 2 Section I is subdivided into four activities belonging to the non-financial corporations and households sectors.

Activity code	Activity	Sector	Type of producer	Source
M.I.55	Accommodation	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, energy and fuel survey, foreign trade statistics, BOP
M.I.56	Food and beverage service activities	S.11	Market	As for S.11
H.I.55	Accommodation	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)
H.I.56	Food and beverage service activities	S.14	Market	As for S.14

The value added of NACE Rev. 2 Section I was generated by corporations (99.6%) and households (0.4%); see Table 3.44.

Table 3.44 Breakdown of NACE Section I by NACE Division and by institutional sector, 2021 (million euros)

NACE Section	Total	Institutional sector			
		S.11	% of S.11 in division	S.14	% of S.14 in division
Accommodation and food service activities (55_56)					
output	868.6	862.6		6.1	
intermediate consumption	521.0	516.3		4.7	
value added	347.7	346.2	99.6	1.4	0.4

Data sources

The output, intermediate consumption and value added of the non-financial corporations sector are calculated based on data from the annual Structural Business Statistics survey. The SBS data collection and processing methodologies are described in Chapter 10.

Other sources used for estimating intermediate consumption include FTS on the imports of goods, BOP data on the imports of services, the energy and fuel survey on fuel consumption by product. In addition, the annual reports of enterprises from the Business Register are used, as they provide useful information for the compilers of NA. For more information, see Chapter 10.

For sole proprietors, the administrative data from the Tax and Customs Board are used. According to this administrative source, the number of registered sole proprietors engaged in accommodation and food service activities amounted to 293 or 1.5% of the total number of sole proprietors in 2021.

Output

SBS survey Module D “Breakdown of turnover” provides information on the revenue from accommodation and food service activities and from other activities at the level of 2-digit codes of NACE Rev. 2. Estimates for the HORECA sector based on business statistics are not validated using either the price-quantity approach or the cost-based approach.

The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4. The estimation methodology used for sole proprietors is described in Section 3.19.

Intermediate consumption

The compilation method for intermediate consumption is described in Section 3.9. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

Adjustments made to basic data

A number of adjustments to output and intermediate consumption are made for differences in concepts, exhaustiveness and when balancing the supply and use tables. The total amount of adjustments made to the value added of accommodation and food service activities in 2021 amounted to 56.3 million euros or 19.3% compared to initial estimates (see Table 3.45).

Table 3.45 NACE Section I by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	844.9	553.5	291.4
..Surveys and censuses	0.0	0.0	0.0
..Administrative records	4.2	3.3	0.9
..Combined data	840.7	550.2	290.5
..Extrapolations and models	0.0	0.0	0.0
..Other	0.0	0.0	0.0
Adjustments	23.7	-32.5	56.3
..Data validation	8.8	-29.3	38.0
..Conceptual	-24.8	-7.7	-17.1
..Exhaustiveness	39.8	4.4	35.4
..Balancing	0.0	0.0	0.0
Final estimate	868.6	521.0	347.7

Recommendations from the GNP Committee Task Force on Distribution

In the expenditure approach, HFCE estimates for HORECA are obtained from the production side. For HFCE, data from the HBS are also available. Estimates from both sources are compared constantly. For more information, see the descriptions provided in Sections 5.7.2. and 5.7.3.

Imports and exports of hotel and restaurant services

Estimates for the imports and exports of hotel and restaurant services are based on the BOP estimated by Eesti Pank. Expenditure on accommodation, food and beverage serving services by non-resident travellers in Estonia and by resident travellers outside the economy are included in travel services.

3.16. Information and communication (NACE Rev. 2 Section J)

Introduction

NACE Rev. 2 Section J includes the production and distribution of information and cultural products, the provision of the means to transmit or distribute these products, as well as communications, information technology activities and the processing of data and other information service activities. This section describes the estimates for own-account produced software.

The value added of NACE Rev. 2 Section J in 2021 amounted to 1.9 billion euros with a 6.1% share in the GNI; see Table 3.46.

Table 3.46 Contribution of NACE Section J to GDP and GNI by NACE Division, 2021

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Publishing activities (58)					
output	220.1				
intermediate consumption	119.3				
value added	100.8	5.3	0.4	0.3	0.3
Motion picture, video and television programme production, sound recording and music publishing, programming and broadcasting activities (59_60)					
output	223.9				
intermediate consumption	93.7				
value added	130.2	6.9	0.5	0.4	0.4
Telecommunications (61)					
output	768.7				
intermediate consumption	364.3				
value added	404.4	21.4	1.5	1.3	1.3
Computer programming, consultancy and related activities; information service activities (62_63)					
output	3,114.2				
intermediate consumption	1,863.9				
value added	1,250.3	66.3	4.5	4.0	4.1
Total					
output	4,326.9				
intermediate consumption	2,441.2				
value added	1,885.7	100.0	6.9	6.0	6.1

In the SUT framework, NACE Rev. 2 Section J is divided into ten activities belonging to the non-financial corporations, households and general government sectors.

Activity code	Activity	Sector	Type of producer	Source
M.J.58	Publishing activities	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, energy and fuel survey, foreign trade statistics, BOP
M.J.59_60	Food and beverage service activities	S.11	Market	As for S.11
M.J.61	Telecommunications	S.11	Market	As for S.11
M.J.62_63	Computer programming, consultancy and related activities; information service activities	S.11	Market	As for S.11
N.J.59_60	Television programme production activities; programming and broadcasting activities	S.13	Non-market	PSFS

Activity code	Activity	Sector	Type of producer	Source
N.J.62_63	Other information technology and computer service activities; information service activities	S.13	Non-market	PSFS
H.J.58	Publishing activities	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)
H.J.59_60	Motion picture, video and television programme production, sound recording and music publishing, programming and broadcasting activities	S.14	Market	As for S.14
H.J.61	Telecommunications	S.14	Market	As for S.14
H.J.62_63	Computer programming, consultancy and related activities; information service activities	S.14	Market	As for S.14

The value added of NACE Rev. 2 Section J was generated by corporations (94.4%), the general government (5.5%) and households (0.2%); see Table 3.47.

Table 3.47 Breakdown of NACE Section J by NACE Division and by institutional sector, 2021
(million euros)

NACE Division	Total	Institutional sector					
		S.11	% of S.11 in division	S.13	% of S.13 in division	S.14	% of S.14 in division
Publishing activities (58)							
output	220.1	219.7		0.0		0.4	
intermediate consumption	119.3	119.0		0.0		0.3	
value added	100.8	100.6	99.9	0.0	0.0	0.1	0.1
Motion picture, video and television programme production, sound recording and music publishing, programming and broadcasting activities (59_60)							
output	223.9	172.3		51.1		0.5	
intermediate consumption	93.7	81.8		11.7		0.3	
value added	130.2	90.5	69.5	39.5	30.3	0.2	0.2
Telecommunications (61)							
output	768.7	768.4		0.0		0.3	
intermediate consumption	364.3	364.1		0.0		0.2	
value added	404.4	404.3	100.0	0.0	0.0	0.1	0.0
Computer programming, consultancy and related activities; information service activities (62_63)							
output	3,114.2	3,026.5		83.3		4.5	

NACE Division	Total	Institutional sector					
		S.11	% of S.11 in division	S.13	% of S.13 in division	S.14	% of S.14 in division
intermediate consumption	1,863.9	1,842.4		19.6		1.9	
value added	1,250.3	1,184.1	94.7	63.7	5.1	2.5	0.2
Total							
output	4,326.9	4,186.9		134.4		5.6	
intermediate consumption	2,441.2	2,407.3		31.2		2.7	
value added	1,885.7	1,779.5	94.4	103.2	5.5	3.0	0.2

Data sources

The output, intermediate consumption and value added of the non-financial corporations sector are calculated based on data from the annual Structural Business Statistics survey. The SBS data collection and processing methodology is described in Chapter 10.

Other sources for estimating output and intermediate consumption include BOP statistics on the export and import of services, FTS, and the energy and fuel survey. In addition, the annual reports of enterprises from the Business Register are used, as they provide useful information for the compilers of NA. For more information, see Chapter 10.

In the general government sector, the main data source used for output is the PSFS system. The methodology for estimating non-market output is the same as for NACE Section O (see Section 3.21).

Tax declarations on the business income of sole proprietors received from the Tax and Customs Board are the main source of data on unincorporated enterprises in the households sectors. According to this administrative source, the number of registered sole proprietors engaged in information and communication activities was 331 or 1.7% of the total number of sole proprietors in 2021.

Output

The SBS survey Module D “Breakdown of turnover” provides information on revenue from publishing, motion picture and sound recording activities, radio and TV broadcasting and programming activities, telecommunications, information technology and other information service activities, as well as other activities at the level of 2-digit codes of NACE Rev. 2. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

The estimation methodology used for unincorporated enterprises is described in Section 3.19.

Intermediate consumption

The compilation method for intermediate consumption is described in Section 3.9. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

Adjustments made to basic data

A number of adjustments to output and intermediate consumption are made for differences in concepts, exhaustiveness and when balancing the supply and use tables. The total amount of adjustments made to the value added of information and communication in 2021 amounted to 127.4 million euros or 7.2% compared to initial estimates (see Table 3.48).

Table 3.48 NACE Section J by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	4,246.6	2,488.4	1,758.3
..Surveys and censuses	0.0	0.0	0.0
..Administrative records	95.6	37.6	58.0
..Combined data	4,104.4	2,450.8	1,653.6
..Extrapolations and models	46.6	0.0	46.6
..Other	0.0	0.0	0.0
Adjustments	80.3	-47.2	127.4
..Data validation	17.7	-15.0	32.7
..Conceptual	-173.8	-19.4	-154.4
..Exhaustiveness	236.4	-12.7	249.1
..Balancing	0.0	0.0	0.0
Final estimate	4,326.9	2,441.2	1,885.7

Own-account produced software

Expenditures made on software are treated as GFCF, as recommended by the GNP Committee on Software Measurement (Eurostat/C1/GNIC/015–Rev.1). A distinct estimate is made for own-account produced software.

In benchmark years (2010, 2014, 2018, 2022), own-account produced software is calculated using data from the Structure of Earnings Survey. This survey is conducted every four years according to Council Regulation (EC) No 530/1999 and taking into consideration the requirements of Estonian users. The target population of the Structure of Earnings Survey includes enterprises, institutions and non-profit associations of Estonia. It takes into account hours actually worked by full-time and part-time employees and overtime working hours.

The estimation of own-account software includes labour costs. For this purpose, the wages of the following categories of IT staff are considered, according to the International Standard Classification of Occupations (ISCO 08) [code 25 “Information and communications technology professionals”]:

- 2511: System analysts;
- 2512: Software developers;
- 2513: Web and multimedia developers;
- 2514: Applications programmers;
- 2519: Software and applications developers and analysts n.e.c.;
- 2521: Database designers and administrators;
- 2522: System administrators;
- 2523: Computer network professionals;
- 2529: Database and networks professionals n.e.c.

According to the GNP recommendations on software measurement, an adjustment factor of 50% is applied to estimate the time spent on software development. For activity NACE 62, it was assumed that only 25% of the time is spent on the production of own-account software. For benchmark years, wage costs are multiplied by the ratio of EMTAK 6201 output to wage costs to calculate the software for own use for market activities. For non-market activities, a reduced factor is used as no mark-up for profit is applied. Data for the year 2021 are obtained by applying wage growth coefficients of NACE 62 derived from the SBS.

In 2021, own-account produced software was estimated at 426.1 million euros; see Table 3.49.

Table 3.49 Own-account produced software by NACE Section, 2021
(million euros)

NACE Section	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Agriculture, forestry and fishing (A)	1.9	1.9	0.0	0.0	0.0	0.0
Mining and quarrying (B)	0.1	0.1	0.0	0.0	0.0	0.0
Manufacturing (C)	20.6	20.6	0.0	0.0	0.0	0.0
Electricity, gas, steam and air conditioning supply (D)	15.8	15.8	0.0	0.0	0.0	0.0
Water supply; sewerage, waste management and remediation activities (E)	1.1	1.1	0.0	0.0	0.0	0.0
Construction (F)	1.6	1.6	0.0	0.0	0.0	0.0
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	19.4	19.4	0.0	0.0	0.0	0.0
Transportation and storage (H)	24.9	24.7	0.0	0.2	0.0	0.0
Accommodation and food service activities (I)	0.3	0.3	0.0	0.0	0.0	0.0
Information and communication (J)	160.9	144.7	0.0	16.2	0.0	0.0
Financial and insurance activities (K)	62.3	0.0	62.3	0.0	0.0	0.0
Real estate activities (L)	1.1	0.4	0.0	0.7	0.0	0.0
Professional, scientific and technical activities (M)	35.0	34.7	0.0	0.3	0.0	0.0
Administrative and support service activities (N)	18.0	18.0	0.0	0.0	0.0	0.0
Public administration and defence; compulsory social security (O)	42.3	0.0	0.0	42.3	0.0	0.0
Education (P)	11.4	0.4	0.0	10.7	0.0	0.3
Human health and social work activities (Q)	3.2	0.9	0.0	2.3	0.0	0.0
Arts, entertainment and recreation (R)	4.8	3.3	0.0	1.4	0.0	0.1
Other service activities (S)	1.4	0.3	0.0	0.0	0.0	1.1
Total	426.1	288.2	62.3	74.2	0.0	1.4

3.17. Financial and insurance activities (NACE Rev. 2 Section K)

Introduction

The value added of financial and insurance activities in 2021 was 1.3 billion euros, which amounted to 4.1% of the GNI (see Table 3.50).

Table 3.50 Contribution of NACE Section K to GDP and GNI by NACE Division, 2021

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Financial service activities, except insurance and pension funding (64)					
output	1,409.2				
intermediate consumption	397.6				
value added	1,011.6	80.0	3.7	3.2	3.3
Insurance, reinsurance and pension funding, except compulsory social security (65)					
output	239.5				
intermediate consumption	79.0				
value added	160.4	12.7	0.6	0.5	0.5
Activities auxiliary to financial services and insurance activities (66)					
output	229.8				
intermediate consumption	137.1				
value added	92.7	7.3	0.3	0.3	0.3
Total					
output	1,878.5				
intermediate consumption	613.7				
value added	1,264.8	100.0	4.6	4.0	4.1

Financial intermediation (NACE Section K) is subdivided into three activities belonging to the financial corporations sector. All financial institutions are market producers, with the exception of the central bank (sub-sector S.121), the output of which consists both of non-market and market production. One activity of insurance agents and brokers in the households sector is also specified.

Activity code	Activity	Sector	Type of producer	Main sources
F.K.64	Financial service activities, except insurance and pension funding	S.121 S.122 S.124 S.125 S.127	Market / non-market	Administrative sources (Eesti Pank, ETCB), statistical surveys, Business Register
F.K.65	Insurance, reinsurance and pension funding, except compulsory social security	S.128 S.129	Market	Statistical surveys
F.K.66	Activities auxiliary to financial services, except insurance and pension funding	S.126	Market	Statistical surveys, Business Register
H.K.66	Activities of insurance agents and brokers	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)

Value added was mainly generated by financial corporations (99.5%); see Table 3.51.

Table 3.51 Breakdown of NACE Section K by NACE Division and by institutional sector, 2021
(million euros)

NACE Division	Total	Institutional sector			
		S.12	% of S.12 in division	S.14	% of S.14 in division
Financial service activities, except insurance and pension funding (64)					
output	1,409.2	1,409.2		0.0	
intermediate consumption	397.6	397.6		0.0	
value added	1,011.6	1,011.6	100.0	0.0	0.0
Insurance, reinsurance and pension funding, except compulsory social security (65)					
output	239.5	239.5		0.0	
intermediate consumption	79.0	79.0		0.0	
value added	160.4	160.4	100.0	0.0	0.0
Activities auxiliary to financial services and insurance activities (66)					
output	229.8	222.5		7.3	
intermediate consumption	137.1	136.4		0.7	
value added	92.7	86.1	92.9	6.6	7.1
Total					
output	1,878.5	1,871.2		7.3	
intermediate consumption	613.7	613.0		0.7	
value added	1,264.8	1,258.2	99.5	6.6	0.5

Adjustments made to basic data

A number of adjustments are made for differences in concepts, exhaustiveness and when balancing the supply and use tables. The total amount of adjustments made to the value added of financial and insurance activities in 2021 was 63.8 million euros or 5.3% compared to initial estimates.

Table 3.52 NACE Rev. 2 section K by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	1,784.8	583.8	1,201.0
..Surveys and censuses	848.7	583.1	265.6
..Administrative records	7.3	0.7	6.6
..Combined data	0.0	0.0	0.0
..Extrapolations and models	928.8	0.0	928.8
..Other	0.0	0.0	0.0
Adjustments	93.7	29.9	63.8
..Data validation	27.7	1.3	26.4
..Conceptual	0.0	32.9	-32.9
..Exhaustiveness	66.0	-4.7	70.8
..Balancing	0.0	0.4	-0.4
Final estimate	1,878.5	613.7	1,264.8

Data sources

Statistics on Eesti Pank, credit institutions, big leasing companies and pension funds are produced and published quarterly by Eesti Pank. The rest of financial intermediaries (sub-sectors S.124, S.125 and S.127), financial auxiliaries (sub-sector S.126) and insurance companies are covered by quarterly statistical surveys carried out by Statistics Estonia. Annual data are the sum of quarters. In case of non-response, annual administrative accounting data from the Business Register are used additionally. In the financial corporations sector, all size classes are covered. The Estonian Financial Supervision and Resolution Authority supervises banking, insurance companies and investment funds in Estonia; the rest of the financial intermediaries are not supervised. Good-quality administrative data on wages and salaries and social contributions in the financial corporations sector are obtained from the Tax and Customs Board on a regular and timely basis

3.17.1. Financial service activities, except insurance and pension funding (NACE Division 64)

In national accounts, one activity (F.K.64) is specified, which covers the central bank, other monetary financial institutions, non-MMF investment funds, other financial intermediaries and captive financial institutions and money lenders.

Output

Output for NACE Division 64 is calculated by summarising non-FISIM and FISIM parts.

The output of the central bank (S.121) is calculated as the sum of costs, i.e. its intermediate consumption, compensation of employees, consumption of fixed capital and other taxes less subsidies on production. The non-market output of the central bank is allocated to the intermediate consumption of credit institutions (S.122). In 2021, the non-market output of the central bank amounted to 26.0 million euros (see Table 3.54) and market output to 2.0 million euros.

Financial services provided for direct payment can be distinguished in sub-sector S.122 (deposit-taking corporations except the central bank). Output for S.122 (see Table 3.53) is calculated by summarising their commission income, other income, income in kind and own-account software. For deposit-taking corporations except the central bank, income consists of transfers income, cash services, loan management and guarantees, leasing, factoring, electronic services like bank cards, etc., and non-characteristic income (rent, currency exchange etc.). The margins of foreign exchange and securities dealers realised by financial intermediaries are included in their commission income and are therefore recorded as part of the output of financial services.

Table 3.53 Output of deposit-taking corporations except the central bank (S.122), 2021
(million euros)

Indicator	Value
Service charge income	232.0
Other operating income	100.9
Income in kind	0.7
Own-account produced software	39.7
Output	373.3

Financial services are recorded from the acquisition and disposal of financial assets and liabilities on the financial markets in sub-sector S.125. Output for S.125 is calculated by summarising their commission income, other income, income in kind and own-account software. The output and intermediate consumption of non-MMF investment funds (S.124) are zero because investment funds are not self-operating units. Investment funds are managed by fund managers (sub-sector S.126); therefore, their output and intermediate consumption are allocated there.

Table 3.54 Composition of output in financial intermediation (NACE Division 64), 2021

Product group	Value, million euros	%
Characteristic output	1,324.7	94.0
Central banking services	26.0	1.8
Monetary intermediation services	415.9	29.5
Financial intermediation services indirectly measured (FISIM)	727.9	51.7
Auxiliary financial services	154.9	11.0
Non-characteristic output	84.5	6.0
Own-account produced software	56.4	4.0
Own-account R&D	1.1	0.1
Letting services of non-residential buildings	9.1	0.6
Legal, accounting and consultancy services	6.1	0.4
Income in kind	0.7	0.1
Other products	11.2	0.8
Total output	1,409.2	100.0

Intermediate consumption

Intermediate consumption is the sum of commission expenses, administrative expenses except staff costs, operating expenses, other expenses and non-market output of the central bank; income in kind is excluded.

3.17.2. Insurance, reinsurance and pension funding, except compulsory social security (NACE Division 65)

One activity (F.K.65) is distinguished, which includes the following:

- Life insurance includes only direct life insurance.
- Pension funding: the first voluntary pension fund started operating in 1999. Until 2002, the capacity of pension funds was insignificant. The Second Pillar, a mandatory funded pension scheme, was implemented in 2002 according to the pension reform started in 1998. Pension funds are covered from 2002 onwards. With the pension reform in 2021, the Second Pillar pension schemes became voluntary allowing withdrawals; however, the fundamental economic and institutional functions have not been changed. Their output is equal to their intermediate consumption, so that value added is always zero.
- Non-life insurance includes direct non-life insurance.
- There are no reinsurance companies in Estonia.

Output

Output for NACE Division 65 is calculated by summarising characteristic (99.3%) and non-characteristic output (0.7%).

Table 3.55 Composition of output in insurance and pension funds (NACE Division 65), 2021 (million euros)

Product group	Value, million euros	%
Characteristic output	237.9	99.3
Life insurance services	28.7	12.0
Non-life insurance services	172.2	71.9
Pension funds	37.0	15.5
Non-characteristic output	1.6	0.7
Own-account produced software	0.0	0.0
Own-account R&D	1.4	0.6
Income in kind	0.2	0.1
Retail trade margin	0.0	0.0
Other products	0.0	0.0
Total output	239.5	100.0

For life insurance, output is calculated as follows: premiums earned plus premium supplements less benefits due less increases (plus decreases) in technical reserves and with-profit insurance (Table 3.56). Life insurance includes only direct life insurance. There are no resident reinsurance companies in Estonia; all reinsurance services are purchased from abroad.

Table 3.56 Calculation of output for insurance, 2021 (million euros)

Life insurance	Value
Premiums earned	47.6
...premiums written	47.4
...the change in the reserves for premiums unearned	0.2
+Premium supplements	10.2
-Benefits due	27.7
-Increases in technical reserves and with-profit insurance	1.5
Output	28.7
Non-life insurance	Value
Premiums earned	381.5
...premiums written	377.7
...the change in the reserves for premiums unearned	3.8
+Premium supplements	12.1
-Adjusted claims incurred	221.3
...claims paid	228.6
...the change in the reserves for claims outstanding	-7.3
Output	172.2

Detailed numerical illustrations of premium supplements calculation are presented below; see Table 3.57. Data about balance sheet liabilities and profit-loss statements come from surveys conducted by Statistics Estonia, and annual data on investment income are the sum of quarters.

$$\text{Premium supplements} = D \times \frac{(A + B)}{(A + B + C)}$$

Where D is investment income from other investments (sum of quarters);
 A is financial liabilities of insurance contracts with investment risk;
 B is insurance technical reserves; and
 C is equity capital.

Table 3.57 Calculation of premium supplements, 2021
 (million euros)

Life insurance		2021
Balance sheet:		
Financial liabilities of insurance contracts with investment risk	A	832.2
Technical reserves	B	1,450.9
Equity capital	C	387.1
Profit statement:		
Investment income: other investments	D	11.9
Life insurance supplements		10.2

The calculation of premium supplements of direct life insurance is presented based on the pro-rata approach.

For non-life insurance, output is calculated as follows: premiums earned plus premium supplements less adjusted claims incurred. Premiums earned are calculated as follows: premiums written minus the change (less increase or plus decrease) in the reserves for premiums unearned. Adjusted claims incurred are calculated as follows: claims paid plus the change (less increase or plus decrease) in the reserves for claims outstanding. The sum of costs method is not applied.

The adjusted claims incurred are calculated based on changes in equalisation provisions.

The impact of adjusted claims on the GDP and the GNI is shown in Table 3.58.

For pension schemes, output and intermediate consumption are equal to operating costs (37.0 million euros in 2021).

The statistical survey of insurance companies provides the realised and unrealised holding gains and losses on separate entries. In the measurement of insurance output, holding gains and losses are excluded. Claims management costs are excluded in the calculation of adjusted claims. Data on claims management costs are obtained from the statistical survey of insurance companies. Income earned by investing own funds is excluded from premium supplements. The calculations of premium supplements of direct non-life insurance and reinsurance ceded are made similarly as for direct life insurance, where own funds are excluded based on the pro-rata approach.

The algorithm for output calculation included the adjusted claims incurred which corrected for volatility in claims. For the calculation of adjusted claims, the accounting data on actual claims incurred are used plus the change in equalisation provisions, whereas the following are excluded from this calculation: incurred claims-related costs (in non-life insurance), benefits-related costs (in life insurance) and benefits due.

Table 3.58 Impact of allocation of insurance on GDP and GNI, 2021
(million euros)

Indicator	Value
Claims incurred	228.6
Adjusted claims incurred	221.3
Interval	-7.3
Reinsurers' share of claims incurred	21.7
Reinsurers' share of adjusted claims incurred	26.0
Interval	-4.3
Impact on GDP and GNI	-11.6

Allocation of life and non-life insurance output to users

The output of life insurance is fully consumed by households. For non-life insurance, output is divided between counterpart sectors using the breakdown of difference between premiums received and benefits paid by type of insurance and by institutional sectors (see Table 3.59). It should be noted that, for S.12 and S.13, information about premiums paid and benefits received is derived directly from the data of the corresponding sector. Also, data for the rest of the world are taken directly from BOP.

Table 3.59 Allocation of insurance to users, 2021
(million euros)

Non-life insurance (sector)	Intermediate consumption	HFCE	Exports of services	Output	Imports of services
S.11	79.8			82.5	
S.12	10.3			10.3	
S.13	4.3	4.3		4.3	
S.14_ Owners of dwellings	28.7	14.2		14.2	
S.14_ Unincorporated enterprises	3.7	1.3		1.3	
S.14		52.6		52.6	
S.15	0.2	0.2		0.2	
S.2			7.0	7.0	14.3
Total non-life insurance	127.0	72.5	7.0	172.2	14.3
Life insurance (sector)					
S.12				28.7	
S.14		26.8			
S.2			1.8		0.028
Reinsurance (sector)					
S.12	13.3				13.3
Total insurance	140.3	99.3	8.8	200.9	27.7

Intermediate consumption

For insurance, intermediate consumption is calculated as follows: reinsurers' share of earned premiums plus reinsurers' share of premium supplements minus reinsurers' share of adjusted claims accrued minus reinsurance commissions (see Table 3.60).

Table 3.60 Calculation of intermediate consumption for insurance, 2021
(million euros)

		Non-life insurance	Life insurance
Reinsurers' share of earned premiums	=	30.77	1.71
Reinsurers' share of premium supplements	+	0.60	0.00
Reinsurers' share of adjusted claims accrued	-	20.89	0.28
Reinsurance commissions	-	-5.98	-0.31
Intermediate consumption of reinsurance services	=	16.46	1.74

The reinsurance commissions on proportionate reinsurance are recorded together with profit sharing on non-proportionate/excess of loss reinsurance. Thus, both reducing the value of the reinsurance ceded.

There are no resident reinsurance companies in Estonia; all reinsurance services are purchased from abroad.

The branches of foreign insurance companies operating in Estonia (as resident entities) are included in national accounts (NA) and the branches of Estonian insurance companies operating abroad are not included in the NA.

The calculation of cross-border flows of investment income attributable to insurance policy holders is described in Section 8.4.4.1.

3.17.3. Activities auxiliary to financial intermediation (NACE Division 66)

The economic activity F.K.66 belongs to the financial corporations sector and it includes entities that provide services that are involved in or closely related to financial services and that do not entail the elements of financial services.

Output

Output for NACE Division 66 is calculated by summarising characteristic (auxiliary financial services, services of holding companies) and non-characteristic (legal, accounting and consultancy services, income in kind, own-account software and other products) output; see Table 3.61.

Table 3.61 Composition of output in activities auxiliary to financial services (NACE Division 66), 2021

Product group	Value, million euros	%
Characteristic output	215.7	93.8
Auxiliary financial services	214.3	93.3
Services of holding companies	1.3	0.6
Non-characteristic output	14.1	6.2
Legal, accounting and consultancy services	6.2	2.7
Own-account produced software	5.9	2.6
Own-account R&D	0.0	0.0
Income in kind	0.3	0.1
Retail trade margin	1.2	0.5
Other products	0.4	0.2
Total output	229.8	100.0

Intermediate consumption

Intermediate consumption is the sum of commission expenses, administrative expenses except staff costs, operating expenses and other expenses; income in kind is excluded.

3.17.4. FISIM

According to Council Regulation (EC) 448/98, Commission Regulation (EC) 1889/2002 and Chapter 14 of ESA 2010, FISIM calculations concentrate on sub-sectors S.122 and S.125. An internal reference rate is calculated on interbank loans and deposits as the ratio of interest receivable on loans incurred plus interest payable on deposits held between S.122 and S.125. Because the liabilities side is considered more reliable, it is used for the calculation of the internal reference rate. FISIM on loans and deposits is allocated between institutional sectors and their industries. The allocation of FISIM among user industries is based on the output of each industry.

FISIM of households (S.14) is broken down into the following categories: (i) dwelling loans, (ii) loans to households as owners of unincorporated enterprises, and (iii) loans to households as consumers. FISIM of households as consumers is allocated to household final consumption expenditure. FISIM of households as owners of unincorporated enterprises and dwelling loans is allocated to intermediate consumption.

FISIM calculations are made for both sub-sectors: S.122 and S.125. The central bank is excluded from the calculation of FISIM. The sub-sector S.122 consists of commercial banks and savings and loan associations. Leasing companies which have joined the Estonian Leasing Association (the big leasing companies) dominate in S.125. The published statistics include data on leasing companies who are members of the Estonian Leasing Association, and cover approximately 95% of the leasing market.

Data sources

For the calculation of FISIM for sub-sectors S.122 and S.125, Eesti Pank provides Statistics Estonia with the main data source (covering banks and leasing companies). For a very small group of other financial intermediaries, information is extracted by SE from financial reports

available from the Business Register. For the sub-sector S.122, the data include the stocks of loans and deposits, and weighted average interest rates categorised by user sector. For the sub-sector S.125, only the data on stocks allocated by user sector are available.

The interest rates on loans used for both S.122 and S.125 are the weighted average interest of commercial banks. The data on interest rates on the deposits of sub-sector S.122 are used for the calculation of FISIM on deposits. Data on FISIM import and FISIM export, allocated between institutional sectors and their industries, are provided by Eesti Pank.

Availability of data on the stocks of loans and deposits in S.122:

- Non-financial corporations (S.11): data for both commercial banks and savings and loan associations are available from banking statistics.
- Financial auxiliaries and captive financial institutions (S.126 + S.127): data for commercial banks are available from banking statistics. It is presumed that savings and loan associations receive no deposits from and grant no loans to S.126 and S.127.
- Insurance corporations and pension funds (S.128 + S.129): data for commercial banks are available from banking statistics. It is presumed that savings and loan associations receive no deposits from and grant no loans to S.128 and S.129.
- General government (S.13): data for both commercial banks and savings and loan associations are available from banking statistics.
- Households (S.14): as for loans, commercial bank loans vis-à-vis households divided by the purpose of loans can be allocated to households as consumers, as owners of dwellings and as owners of unincorporated enterprises. There is only the total sum available for savings and loan associations' loans vis-à-vis households. The necessary breakdown is achieved using the same allocation as in the case of commercial banks. As for deposits, there are only totals of deposits available from banking statistics for commercial banks and savings and loan associations. So, at present, all deposits are allocated to households as consumers.
- Non-profit institutions serving households (S.15): both commercial banks' and savings and loan associations' loans to / deposits from non-profit institutions are available from banking statistics.

Availability of data on the stocks of loans in S.125:

- Non-financial corporations (S.11): data for the big leasing companies are available from leasing statistics.
- Financial auxiliaries and captive financial institutions (S.126 + S.127): data for the big leasing companies are available from leasing statistics.
- Insurance corporations and pension funds (S.128 + S.129): data for the big leasing companies are available from leasing statistics.
- General government (S.13): data for the big leasing companies are available from leasing statistics.
- Households (S.14): for loans, the necessary breakdown for the big leasing companies is achieved as follows: it is possible to get the total sum of loans granted to S.14 and of dwelling loans from leasing statistics. The remaining part is allocated to households as consumers and households as owners of unincorporated enterprises with the same allocation pattern as in the case of S.122. There is only the total sum of loans (granted to S.14) available for the other part of sub-sector S.125, and it is allocated with the same allocation pattern as in the case of big leasing companies. It is presumed that the other part of sub-sector S.125 grants loans only to S.14.

- Non-profit institutions serving households (S.15): data for the big leasing companies are available from leasing statistics and cover all non-profit institutions except foundations belonging to the government sector.

Output

The calculation of the flows of interest is based on sector-specific interest rates, i.e. rates individually computed for each institutional user sector. These rates are divided into short-term (maturity ≤ 1 year) and long-term (maturity >1 year) rates. FISIM is calculated separately for each user sector. FISIM by resident institutional sector is calculated as the sum of FISIM on loans granted to the institutional sector and of FISIM on the deposits of the institutional sector.

FISIM on the loans granted to the resident institutional sector is equal to interest receivable on loans minus loan stocks which have been multiplied by the internal reference rate. FISIM on the deposits of the resident institutional sector is equal to deposit stocks multiplied by the internal reference rate minus interest payable on deposits. The internal reference rate is calculated on interbank loans and deposits as the ratio of interest receivable on loans incurred plus interest payable on deposits held between S.122 and S.125. Because the liabilities side is considered more reliable, it is used for the calculation of the internal reference rate.

Exported FISIM is calculated as the sum of FISIM on loans granted to non-residents and FISIM on the deposits of non-residents. FISIM on loans to non-residents is compiled according to the following formula: interest receivable minus loan stocks which have been multiplied by the external reference rate. FISIM on the deposits of non-residents is compiled according to the following formula: deposit stocks multiplied by the external reference rate minus interest payable.

FISIM imported by each institutional sector is calculated as the sum of FISIM imported for loans and FISIM imported for deposits. FISIM imported for loans equals interest receivable by non-resident financial intermediaries minus loan stocks which have been multiplied by the external reference rate. FISIM imported for deposits equals deposit stocks multiplied by the external reference rate minus interest payable by non-resident financial intermediaries.

The external reference rate is compiled using the reports from credit institutions on the balance of loans and resources, from which the stocks against non-resident financial intermediaries are taken by currency and by maturity. The domestic subsector S.125 is not included in the calculation of the external reference rate as it has a very negligible impact on the reference rate.

The flows of interest between and within the subsectors S.122 and S.125 and between resident financial institutions (FIs) and non-resident FIs as well as the corresponding stocks of loans and deposits impact the production of FISIM only through the internal and external reference rates.

FISIM output and allocation by sector is presented in table 3.62.

Table 3.62 FISIM output and allocation by sector, 2021
(million euros)

Indicator		Total	Institutional sector					
			S.11	S.12	S.13	S.14	S.15	S.2
FISIM produced allocated to domestic sectors	1	697.4	245.5	3.2	6.4	441.3	0.9	
Export of FISIM	2	30.6						30.6
FISIM output	3=1+2	727.9	245.5	3.2	6.4	441.3	0.9	30.6
Import of FISIM	4	59.2	45.4	7.7	5.5	0.6		
Total use of FISIM	5=3+4	787.2	290.9	10.9	12.0	441.9	0.9	30.6
Effect of FISIM on GDP	6	247.0	-45.4	-7.7	12.0	256.7	0.9	30.6
Effect of FISIM on GNI	7	269.6			12.0	256.7	0.9	

The allocation of FISIM between sectors and between the intermediate consumption of the general government, NPISH, intermediate consumption/HFCE within households is based on reliable data collected and provided by Eesti Pank. As previously mentioned, these data include information on loans and deposits divided between the sectors. Regarding households, information is also provided on the purpose of loans and leases together with the corresponding sums. It allows distinguishing the FISIM of households between intermediate consumption and HFCE.

FISIM allocated to households (see Table 3.63) is broken down into intermediate consumption (households in their capacity as owners of dwellings and of unincorporated enterprises) and final consumption. Data on loans to households enable recognising dwelling loans, loans to households as owners of unincorporated enterprises, and other loans to households. No data on households are available that could be used to divide deposits into the deposits of households as owners of unincorporated enterprises and the deposits of individuals. Therefore, all deposits are considered to be included in the deposits of individuals.

Table 3.63 Allocation of FISIM to households sector, 2021
(million euros)

Indicator		Value
FISIM on loans and deposits of households as consumers	1	256.7
FISIM on loans of households as unincorporated enterprises	2	1.0
FISIM on loans of households as owners of dwellings	3=4+5	184.2
of which:		
-FISIM for imputed rents of dwellings	4	165.2
-FISIM for actual rents of dwellings	5	18.9
Output of households	6=4	165.2
Intermediate consumption of households	7=2+4+5	185.2
Household final consumption expenditure	8=1+4	421.9

The interest received from and paid to the rest of the world is adjusted with the effect of FISIM on trade. The stocks of non-performing loans and the interest accruing on them are included in the calculation of FISIM.

There were no loans from the European Stability Mechanism and the International Monetary Fund to be excluded from the imports of FISIM. The loans from the European Investment Bank

(and European Investment Fund) as well as loans from other international banks classified in S.125 are included in the imports of FISIM.

Financial leasing and hire purchase contracts are identified as loans for the acquisition of fixed assets. “Rental payments” are considered to comprise repayment on principal, interest payment and payment for FISIM, for those lessors who are financial corporations. However, the direct data source provides information only on the stock of principal payments. Due to the lack of information on interest rates associated with leases, the interest rates of loans provided by commercial banks are used as a proxy. The FISIM part of rental payments is treated as intermediate consumption in the case of user sectors S.11, S.12, S.13, S.15. In the case of sector S.14, the FISIM part of rental payments is treated as intermediate consumption for households as owners of unincorporated enterprises and as HFCE for households as consumers and as owners of dwellings.

3.18. Real estate activities (NACE Rev. 2 Section L)

Introduction

The section provides information on the calculation of output and intermediate consumption for the following real estate activities (NACE Rev. 2 Section L):

- Real estate activities, except dwelling services (Section 0);
- Dwelling services (Section 0).

The value added of real estate activities in 2021 amounted to 3,178.3 million euros and 10.3% of the GNI (see Table 3.64).

Table 3.64 Contribution of NACE Section L to GDP and GNI, 2021

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Real estate activities (68)					
output	4,599.8				
intermediate consumption	1,421.5				
value added	3,178.3	100.0	11.5	10.1	10.3

The total value added of real estate activities was generated mainly by corporations (38.2%) and households (59.4%), whereas the contributions of the general government and NPISH sectors were smaller (1.1% and 1.3%, respectively); see Table 3.65. Imputed dwelling services made the largest contribution (54.5%) to the total value added of NACE Division 68.

Table 3.65 Breakdown of NACE Section L by institutional sector, 2021
(million euros)

NACE Section	Total	Institutional sector							
		S.11	% of S.11 in division	S.13	% of S.13 in division	S.14	% of S.14 in division	S.15	% of S.15 in division
Real estate activities (L)									
output	4,599.8	2,161.4		105.3		2,274.7		58.4	
intermediate consumption	1,421.5	947.8		70.1		388.0		15.6	
value added	3,178.3	1,213.6	38.2	35.2	1.1	1,886.7	59.4	42.8	1.3

In the SUT framework, NACE Rev. 2 Section L is divided into three activities belonging to the non-financial corporations, households, NPISH and general government sectors.

Activity code	Activity	Sector	Type of producer	Source
M.L.681	Real estate activities, except dwellings	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”
H.L.68201	Actual rents of dwellings (quasi-corporations)	S.11	Market	See 3.18.2
O.L.68202	Imputed rents of owner-occupied dwellings (quasi-corporations)	S.11	Non-market	See 3.18.2
N.L.681	Real estate activities, except dwellings	S.13	Non-market	PSFS
H.L.681	Real estate activities, except dwellings	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)
H.L.68201	Actual rents of dwellings	S.14	Market	See 3.18.2
O.L.68202	Imputed rents of owner-occupied dwellings	S.14	Non-market	See 3.18.2
S.L.681	Real estate activities, except dwellings	S.15	Non-market	Modelled data based on annual reports from the Business Register; annual survey of non-profit institutions

Adjustments made to basic data

A number of adjustments to output and intermediate consumption are made for differences in concepts, exhaustiveness and when balancing the supply and use tables. The total amount of adjustments made to the value added of real estate in 2021 was -554.3 million euros or -14.9% compared to initial estimates (see Table 3.66).

Table 3.66 NACE Section L by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	4,684.4	951.8	3,732.6
..Surveys and censuses	15.7	15.7	0.0
..Administrative records	138.6	71.4	67.2
..Combined data	2,339.2	864.8	1,474.4
..Extrapolations and models	2,191.0	0.0	2,191.0
..Other	0.0	0.0	0.0
Adjustments	-84.6	469.7	-554.3
..Data validation	49.4	0.2	49.2
..Conceptual	-182.5	463.8	-646.2
..Exhaustiveness	48.5	5.8	42.7
..Balancing	0.0	0.0	0.0
Final estimate	4,599.8	1,421.5	3,178.3

3.18.1. Real estate activities, except dwelling services

In 2021, the value added of real estate activities, except dwelling services, amounted to 1,218.1 million euros and 4.0% of the GNI.

The total value added of real estate activities, except dwellings, was generated mainly by corporations (92.5%); see Table 3.67.

Table 3.67 Breakdown of NACE Section L.681 by institutional sector, 2021
(million euros)

NACE Section	Total	Institutional sector							
		S.11	% of S.11 in division	S.13	% of S.13 in division	S.14	% of S.14 in division	S.15	% of S.15 in division
Real estate activities, except dwellings									
output	2,235.8	2,053.7		105.3		18.4		58.4	
intermediate consumption	1,017.0	926.3		70.1		4.9		15.6	
value added	1,218.8	1,127.3	92.5	35.2	2.9	13.5	1.1	42.8	3.5

Data sources

The output, intermediate consumption and value added of the non-financial corporations sector are calculated based on data from the annual Structural Business Statistics survey. The SBS data collection and processing methodology is described in Chapter 10.

Other sources used for estimating intermediate consumption include foreign trade statistics, BOP data on the import and export of services, and the energy and fuel survey. In addition, the annual reports of enterprises from the Business Register are used as well, as they provide useful information for the compilers of NA. For more information, see Chapter 10.

The PSFS system is the main source used for data on output in the general government sector.

For the NPISH sector, NACE Section L consists of housing associations, garage associations and horticultural associations. In 2021, NPISH belonging to NACE Section L contributed approximately 15% of the value added created by NPISH. The number of NPISH in Section L constituted approximately 60% of the total number of organisations belonging to the NPISH sector.

Output

SBS survey Module D “Breakdown of turnover” for real estate activities provides information on revenue by kind of activity at the level of 2-digit codes of NACE Rev. 2. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

The methodology for estimating the non-market output of GG units is the same as the methodology used for NACE Section O (see Section 3.21). The estimation methodology for unincorporated enterprises in the households sector is described in Section 3.19. The methodology of NPISH estimation is described in Section 3.25.

Intermediate consumption

The compilation method for the intermediate consumption of non-financial corporations is described in Section 3.9. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

The methodology for estimating the intermediate consumption of general government industries is the same as the methodology used for NACE Section O (see Section 3.21). The estimation methodology for unincorporated enterprises in the households sector is described in Section 3.19. The methodology of NPISH estimation is described in Section 3.25.

3.18.2. Dwelling services

3.18.2.1. Introduction

This section provides a detailed description of the methodology used to calculate housing services produced by households (both actual and imputed rent) and quasi-corporations, including numerical data.

In 2021, the value added of dwelling services amounted to 1,959.5 million euros and 6.4% of the GNI. The total value added of dwelling services was generated mainly by households (95.6%); see Table 3.68

Table 3.68 Breakdown of dwelling services by institutional sector, 2021
(million euros)

NACE Section	Total	Institutional sector							
		S.11 (quasi-corporations)	% of S.11 in division	S.13	% of S.13 in division	S.14	% of S.14 in division	S.15	% of S.15 in division
Dwellings services									
output	2,364.0	107.7		0.0		2,256.3		0.0	
intermediate consumption	404.5	21.4		0.0		383.1		0.0	
value added	1,959.5	86.3	4.4	0.0	0.0	1,873.2	95.6	0.0	0.0

Data from the 2021 Population and Housing Census as well as data from the Building Register and Land Register provide information on the distribution of housing by sector.

Table 3.69 Data from the 2021 Population and Housing Census on housing stock by type of ownership*

Ownership	Number of dwellings	Area of dwellings, million m ²
Private (household) dwelling stock	683.327	47.780
Public (government) dwelling stock	12.715	0.497
Non-financial corporations' dwelling stock	38.100	2.173
Total	734.142	50.451

*The table above includes dwellings with initially missing area values, which were imputed using the overall median value. Detached garages and summer houses are not included. "Summer" houses are a technical characteristic in the Building Register.

Dwelling services provided by dwellings owned by general government institutions and non-financial corporations are treated as secondary production since the units representing them are not classified as NACE Section L (Real estate activities).

The output of dwelling services provided by government institutions and non-financial corporations is only indirectly determined for determining individual consumption of all dwelling services and does not change the output of the relevant sector and industry at all.

In 2021, the general government provided dwelling services to households for individual consumption for 3.2 million euros; the dwelling services provided by non-financial corporations to households for individual consumption amounted to 40.1 million euros.

Information about the market output of general government is derived directly from the Public Sector Financial Statements (PSFS) system.

Commission Regulation (EC) No 1722/2005 determines that the rental value of owner-occupied dwellings owned by non-residents should be recorded as the export of services and the corresponding net operating surplus as operating surplus paid to the rest of the world. Analogous entries are made for owner-occupied dwellings owned by non-residents (see the description in Chapter 8 on the transition from GDP to GNI for primary income flows). Since 2009, for non-resident legal owners of dwellings, an artificial unit, called a notional resident unit, has been used in Estonia. Units created for participating in market production are considered as quasi-corporations. Export of travel services and operating surplus for these units are derived from BOP. Eesti Pank calculates these indicators both for non-residential houses

occupied by owners and for houses rented from non-residents. In 2021, quasi-corporations provided 45.1 million euros as market services and 62.6 million euros as imputed rent. The operating surplus paid to the rest of the world amounted to 50.6 million euros.

3.18.2.2. Combination of stratification and UCM methods

This section provides information on how the principles set out in Commission Implementing Regulation (EU) 2021/1949 on dwelling services are applied to estimate imputed and actual rents.

Data from the 2021 Population and Housing Census and from the Building Register provide an overview of how households' housing is divided according to actual or imputed rentals and into houses and apartments.

Table 3.70 Data from the 2021 Population and Housing Census on housing stock by type of rentals and type of dwellings*

	Dwellings	Apartments	Houses
Total area(million m2)	50.451	26.989	23.461
Privately rented, area (million m2)	6.252	4.331	1.921
Privately rented, area	12.39%	16.05%	8.19%
Total number of dwellings	734.142	512.231	221.911
Privately rented, number	105.904	86.908	18.996
Privately rented, number	14.43%	16.97%	8.56%

*The table above includes dwellings with initially missing area values, which were imputed using the overall median value. Detached garages and summer houses are not included. "Summer" houses are a technical characteristic in the Building Register.

According to the 2021 Population and Housing Census, the share of privately rented dwellings in the total area of dwellings increased from 5.5% to 12.4% (see Table 3.70). Based on this fact and in accordance with the principles set out in Commission Regulation (EC) 1722/2005 on dwelling services (in line with the update proposed in GNIC/472), in 2021, the stratification method was used for apartments and detached garages, while the User Cost Method (UCM) was left unchanged for houses (see Table 3.71).

Table 3.71 Types of methods

Rents	Dwellings	Method
Actual rental	Apartments and detached garages	Stratification method
	Houses	User Cost Method
Imputed rental	Apartments and detached garages	Stratification method
	Houses	User Cost Method

The User Cost Method was left unchanged for houses since the market rentals are not representative of housing types other than apartments, the share of private rental houses is only 8.2% and does not exceed 10% (see Table 3.70), and the disparity between private and public rentals is 6 and exceeds a factor of 3 (see Table 3.72).

Table 3.72 Private and public rentals, 2019–2021

Year	2019	2020	2021
Private rent, euros/square metre/month	10.44	10.18	10.39
Public rent, euros/square metre/month	1.90	1.78	1.73
Disparity, times	5.48	5.71	6.02

Table 3.73 presents the annual housing stock of households, output and intermediate consumption by types of dwellings in 2021, and Table 3.74 presents the detailed overview.

Table 3.73 The average annual housing stock of households, output and intermediate consumption by types of dwellings in 2021

	Actual rentals	Imputed rentals
Average annual dwelling stock, million m ² *	6.156	44.664
Output of dwelling services, million euros	278.680	2,085.329
Intermediate consumption, million euros	49.990	354.513
Value added, million euros	228.691	1,730.817

*The table above includes dwellings with initially missing area values, which were imputed using the overall median value. Detached garages and summer houses are included.

Table 3.74 Detailed overview of the average annual housing stock of households, output and intermediate consumption by types of dwellings in 2021 (million euros)

	Year	Formula	Method
Imputed rent for owner-occupied apartments and detached garages		1	
Average annual area, million m ²	21.532	2	
Output	1,274.578	3 = 4 + 5 - 9	Stratification method, extrapolations and models
imputed rent for owner-occupied apartments	1,940.546	4	Stratification method, extrapolations and models
imputed rent for detached garages	24.387	5	Stratification method, extrapolations and models
furniture part of rent (adjustment coefficient 1),%	0.90	6	
imputed rent for empty and seasonally owner-occupied apartments (adjustment coefficient 2),%	0.95	7	
adjustment for real estate portals rents (adjustment coefficient 3),%	0.75	8	
total adjustments for furniture part, empty and seasonally occupied apartments and for real estate portals rents	690.355	9 = 4 / (1 - 6 * 7 * 8)	Extrapolations and models
IC	181.970	10 = 11 + 12 + 13	
expenditures on maintenance and repair of owner-occupied apartments, detached garages and apartment associations	90.605	11	HBS, survey of non-profit organisations (housing associations and

	Year	Formula	Method
			garage, gardening, water management and homeowners associations), conceptual adjustments
net insurance or service charges related to owner-occupied apartments	14.550	12	Allocation of insurance, conceptual adjustments
FISIM	76.816	13	Allocation of FISIM, conceptual adjustments
Taxes paid related to owner-occupied apartments	6.545	14	Administrative records
CFC related to owner-occupied apartments and detached garages	315.436	15	PIM, extrapolations and models
Net operating surplus for owner-occupied apartments and associated land, detached garages	770.627	$16 = 3 - 10 - 14 - 15$	Residual method
Imputed rent for owner-occupied houses		1	
Average annual area, million m ²	23.132	2	
Output	810.751	$3 = 4 + 8 + 9 + 10$	UCM
IC	172.542	$4 = 5 + 6 + 7$	Conceptual adjustments
expenditures on maintenance and repair of owner-occupied houses	73.240	5	HBS, survey of non-profit organisations (housing associations and garage, gardening, water management and homeowners associations), conceptual adjustments
net insurance or service charges related to owner-occupied houses	14.155	6	Allocation of insurance, conceptual adjustments
FISIM	85.147	7	Allocation of FISIM, conceptual adjustments
Taxes paid related to owner-occupied houses	6.754	8	Administrative records
CFC related to owner-occupied houses	256.071	9	PIM, extrapolations and models
Net operating surplus for rented houses and associated land adjusted for empty and seasonally occupied houses reduced by CFC and IC related to empty houses	375.384	$10 = 11 - 12 - 13$	Extrapolations and models
Net operating surplus for rented houses and associated land	392.320	11	Extrapolations and models
CFC related to empty houses	13.909	12	Extrapolations and models
IC related to empty houses	3.027	13	Extrapolations and models
Actual rent for rented apartments		1	
Average annual area, million m ²	4.101	2	
Output	221.463	$3 = 4 - 8$	Stratification method, extrapolations and models

	Year	Formula	Method
actual rental for rented apartments	343.754	4	Stratification method, extrapolations and models
furniture rental (adjustment coefficient 1),%	0.90	5	
actual rental for empty and seasonally rented apartments (adjustment coefficient 2),%	0.95	6	
adjustment for real estate portals rents (adjustment coefficient 3),%	0.75	7	
total adjustments for furniture part, empty and seasonally occupied apartments and for real estate portals rents	122.291	$8 = 4 * (1 - 5 * 6 * 7)$	Extrapolations and models
IC	34.661	$9 = 10 + 11 + 12$	
expenditures on maintenance and repair of rented apartments, detached garages and apartment associations	17.597	10	HBS, survey of non-profit organisations (housing associations and garage, gardening, water management and homeowners associations), extrapolation and models
net insurance or service charges related to rented apartments	2.433	11	Allocation of insurance, conceptual adjustments
FISIM	14.631	12	Allocation of FISIM, conceptual adjustments
Taxes paid related to rented apartments	1.247	13	Administrative records
CFC related to rented apartments	34.716	14	PIM, extrapolations and models
Net operating surplus for rented apartments and associated land	150.839	$15 = 3 - 9 - 13 - 14$	Residual method
Actual rent for rented houses		1	
Average annual area, million m ²	2.055	2	
Output	57.218	$3 = 4 + 8 + 9 + 10$	UCM
IC	15.329	$4 = 5 + 6 + 7$	
expenditures on maintenance and repair of rented houses	6.507	5	HBS, survey of non-profit organisations (housing associations and garage, gardening, water management and homeowners associations), extrapolation and models
net insurance or service charges related to rented houses	1.258	6	Allocation of insurance, conceptual adjustments
FISIM	7.565	7	Allocation of FISIM, conceptual adjustments
Taxes paid related to rented houses	0.600	8	Administrative records
CFC related to rented houses	8.117	9	PIM, extrapolations and models
Net operating surplus for rented houses and associated land adjusted for empty and seasonally occupied houses reduced by CFC and IC related to empty houses	33.171	$10 = 11 - 12 - 13$	Extrapolations and models

	Year	Formula	Method
Net operating surplus for rented houses and associated land	34.676	11	Extrapolations and models
CFC related to empty houses	1.236	12	Extrapolations and models
IC related to empty houses	0.269	13	Extrapolations and models

The average annual dwelling area data for owner-occupied dwellings (imputed rentals) and for rented dwellings (actual rentals) are updated with the latest available data of the Population and Housing Census (2021). The 2021 PHC was based on data from registers, including the Building Register and the Land Register. Since the register data were also used to estimate annual investments in new housing construction for 2012–2021, there was no need to adjust the area of housing stock for 2021. Since 2021, the register-based housing census has become an annual event.

3.18.2.3. Stratification method

This section provides a detailed description of the calculations performed for the output of owner-occupied and rented apartments. For numerical data, see Table 3.74.

The stratification method combines information on the apartment stock, broken down by various strata, with information on rentals paid in each stratum. The information on the stock of dwellings is sourced from the 2021 Population and Housing Census. Since 2021, the register-based housing census has become an annual event.

For stratification purposes, there are three categories of strata affecting the value of the rental. The number of strata meets the minimum requirement as defined in the Regulation on dwelling services.

Categories of strata

Category of strata	Number of strata
Location	17
Size of a dwelling (area, grouped)	6
Year of construction (of the building)	4 (5 strata starting from 2022)

To establish meaningful criteria for stratification, SE utilised multiple regression analysis. This approach yielded sufficient explanatory power to validate the chosen strata categories. In accordance with the principles outlined in Commission Regulation (EC) No 1722/2005, the results revealed a correlation coefficient exceeding 70%.

The information on the market rentals is based on data obtained from Estonia's leading real estate portal which is the only source of detailed rental market statistics available. In accordance with our ongoing contract, we receive the data on individual market rentals on a monthly basis. These data include details on all the variables used in the stratification of the apartments, along with the respective monthly object prices. Using alternative sources for stratification, such as declared rent information from the Estonian Tax and Customs Board or data from the Household Budget Survey, is not possible due to the lack of essential dwelling-specific variables at an individual level.

As the information on market rentals is based on the advertisements of the rentals, it is further adjusted for imputation purposes. The outliers, mistakes and missing values are removed or replaced, if appropriate, using statistical methods such as KNN imputation. As the advertisements represent listings rather than finalised transactions, it was necessary to address biases introduced by the advertisements that were consistently present on the portal for several months. In those cases, only the data from the last month of the listing were considered for analysis to avoid distorting the dataset.

Multiple regression analysis based on the data of the real estate portal was used to estimate the rentals. In cases where the regression analysis provided no sufficient results due to the limitations of the available data, other methods were used to estimate rent, such as using the minimum, maximum or average rental price per stratum.

As a result of the calculation, the average monthly rent for apartments for all strata was 7.6 euros per square metre. According to the Estonian Tax and Customs Board, 38,770 residents received 86,012,449 euros in rental payments in 2021, and the indirectly estimated monthly rent per square metre was 2.7 euros. The obvious difference between the rent declared and the rent published on the real estate portal caused the need for adjustment. In addition, it was taken into account that the data provided by the Estonian Tax and Customs Board do not include all rental transactions, as the data are based only on the information declared in the income tax return.

Additionally, we compared the average prices of sold apartments from the real estate portal with the statistics of real property transactions obtained from Estonia's Land Board. It was concluded that the prices advertised for apartments have been significantly higher than the real selling prices found in the transactions database. Taking this into consideration, we applied an adjustment of 0.75 to the prices of estimated rentals. This "adjustment coefficient 3" was calculated using the grand mean price from both datasets.

Renting furnished apartments is typical in Estonia. As a result, **the rent for furniture** is excluded from the output of apartments using the "adjustment coefficient 1" (see Table 3.74). The coefficient is 0.9 and it is based on an expert assessment.

In Estonia, utility bills are usually not included in the rental but are paid by tenants based on invoices. Therefore, the rent does not include **expenses for heating, water, electricity**, etc. These expenses are also not included in intermediate consumption.

Using the stratification method ensures **that rental-free and cheap rental apartments** and garages are counted as being rented at market rates. The entire stock of apartments without exception is completely covered by the stratification method. The stratification method does not imply the allocation of rental-free and cheap apartments to a special stratum and does not differentiate between these and other types of apartments. The entire stock of houses is also fully covered by the User Cost Method. The UCM does not differentiate between rental-free and cheap houses and other types of houses.

Estonia applies a stratification method for the valuation of services for **detached garages and parking places located separately from residential dwellings**. Based on the information in the registers (Business Register, Building Register and Land Register) about the area of garages permitted for use and the price per square metre of real estate transactions, the initial stock (1995) and annual investment in garages are calculated and added to the stock of fixed assets for owner-occupied apartments. If **garages and parking places are part of dwellings or are**

located on the land related to dwellings, then the services they provide are inevitably included in the calculation of housing services.

The 2021 PHC did not provide information on unoccupied dwellings with the breakdown into empty and reserved dwellings. As part of a special project, the Experimental Statistics Team of Statistics Estonia developed a methodology for identifying **empty and seasonally occupied dwellings** based on the level of annual and monthly electricity consumption.

The information required to determine that a dwelling is empty is that there is no or almost zero electricity consumption during the year. The information required to determine that a dwelling is seasonally occupied is that there is no or almost zero electricity consumption in certain months. The data source of registered metering points has been available since 2017. Before the start of the analysis, from all registered metering points, the metering points with negative consumption, metering points with electricity generation and metering points with very high consumption were removed. Of all the clustering algorithms, the k-means method was chosen, as it is the most common algorithm used to cluster smart meter electricity consumption data. Since k-means requires a number of clusters to be created, the elbow method was used to find out the number of the clusters. The metering condition (empty or seasonally occupied during the year) was linked with the Building Register and Land Register via address (ADS_OID). Registers supplement the information on electricity consumption with information about area, type of property (private or other), type of dwelling (apartment or house) and its condition (under construction or other). Thus, the number and area of empty and seasonally occupied private apartments and houses that are not under construction were found out starting from 2017.

Table 3.75 Area of empty and seasonally occupied private apartments and houses, 2019–2021 (million m²)

	2019	2020	2021
Empty	3.946	3.148	2.605
houses	1.977	1.673	1.470
apartments	1.969	1.476	1.136
Seasonally occupied	0.748	0.753	0.696
houses	0.375	0.377	0.321
apartments	0.373	0.375	0.375

To assess the services of empty and seasonally occupied dwellings, Estonia uses different methods for houses (UCM, see 3.18.2.4) and apartments (SM).

For empty and seasonally occupied apartments, an adjustment is made for output (see “adjustment coefficient 2”, Table 3.74). The “adjustment coefficient 2” is used to consider empty and seasonally occupied apartments. The adjustment coefficient is calculated as the ratio of the area of empty and seasonally (reduced due to the application of the seasonality coefficient) occupied apartments to the total area of apartments. The Experimental Statistics Team of SE presents data on annual and monthly electricity consumption for dwellings classified as seasonally occupied for the calculation of the seasonality coefficient. The calculation of “adjustment coefficient 2” can be seen below. The seasonality coefficient shows the time in a year during which the dwelling was not used for living.

Table 3.76 Calculation of the “adjustment coefficient 2” for empty and seasonally occupied apartments

(million m²)

Apartments belonging to households	A	24.928
Empty apartments belonging to households	B	1.136
Seasonally occupied apartments belonging to households	C	0.375
Seasonality coefficient, %	D	0.54
Adjustment coefficient for empty and seasonally occupied apartments %	$E = 1 - (B + C * D) / A$	0.95

The main source of data for estimating the maintenance and repair costs of apartments by apartment associations and garage associations is a survey of non-profit organisations such as housing associations and garage, gardening, water management and homeowners associations. Associations accumulate their members’ resources in repair funds and act as intermediaries in the provision of maintenance and repair services. In the case of a garage belonging to a garage association, the owner does not incur any other maintenance and repair costs.

Garage and apartment associations are business partnerships, the purpose of which is to support and promote the financial interests of its members. The associations are not the owners of apartments and garages. The members of the associations are classified as private owners of apartments or garages. Such treatment is in accordance with the recommendations of the GNI Committee on cooperative dwellings (see the document GNIC/231).

3.18.2.4. User Cost Method

This section provides a detailed description of the calculations of all cost components included in the output of services of owner-occupied and rented houses (intermediate consumption, consumption of fixed capital, other taxes net of subsidies for production and net operating income). A similar calculation for all cost components is made for apartments (see Table 3.74)

Table 3.77 User Cost Method estimates for owner-occupied and rented houses

Variable	Formula	Million euros	Estimation method
Total output	$1 = 2 + 8 + 11 + 12$	867.969	UCM
Intermediate consumption	$2 = 3 + 6 + 7$	187.871	
expenditures on maintenance and repair	3	79.747	HBS
expenditures on maintenance and repair by houses' owners	$4 = 3 - 5$	76.451	Other conceptual adjustments
expenditures on maintenance and repair by empty houses' owners	5	3.296	Other conceptual adjustments
net insurance or service charges related to house stock	6	15.413	Conceptual allocation of insurance
FISIM	7	92.711	Conceptual allocation of FISIM
Total taxes paid by houses' owners	8	7.354	Administrative records
Consumption of fixed capital	9	264.189	CFC (PIM)
consumption of fixed capital by houses' owners	$10 = 9 - 11$	249.044	Other conceptual adjustments
consumption of fixed capital by empty houses' owners	11	15.145	Other conceptual adjustments
Net operating income for houses and associated land, adjusted for empty houses expenses	$12 = 13 - 5 - 11$	408.555	Other conceptual adjustments
Net operating surplus for houses and associated land	13	426.996	Other conceptual adjustments

The main data source for estimating expenditures on maintenance and repair for houses and apartments is the Household Budget Survey (HBS). In the HBS, expenditures on repair and maintenance goods and services are divided into minor repairs, major repairs and construction. HBS information on expenditures per square metre of dwelling area is broken down by type of dwelling (house or apartment) into the following groups of expenditures in Table 3.78.

Table 3.78 HBS data on maintenance and repair expenditures for houses, 2020 (euros per square metre)

HBS	Expenditures	Costs for owners and tenants	Weighted costs for owners	Weighted costs for tenants	Tenant's cost for owners	Intermediate consumption
		$1 = 2 + 3$	2	3	4	$5 = 2 - 4$
	Total costs	3.443	3.436	0.007	0.270	3.166
431001	Wood (minor repairs)	0.401	0.398	0.003	0.141	0.257
431002	Stones, small blocks (minor repairs)	0.094	0.094			0.094
431004	Glass (minor repairs)	0.015	0.015			0.015
431005	Metal (minor repairs)	0.036	0.036			0.036
431006	Cement, putty (minor repairs)	0.163	0.162	0.001	0.054	0.108
431007	Roofing material (minor repairs)	0.149	0.149			0.149
431008	Isolation material (minor repairs)	0.132	0.132			0.132
431009	Sanitary ware (minor repairs)	0.131	0.131			0.131
431010	Paints (minor repairs)	0.354	0.354	0.001	0.052	0.302
431011	Wallpapers (minor repairs)	0.050	0.050			0.050

HBS	Expenditures	Costs for owners and tenants	Weighted costs for owners	Weighted costs for tenants	Tenant's cost for owners	Intermediate consumption
431012	Ceramic tiles (minor repairs)	0.028	0.025	0.003	0.023	0.002
431013	Parquet (minor repairs)	0.092	0.092			0.092
431014	Other floor coverings (minor repairs)	0.006	0.006			0.006
431015	Other finishing materials (minor repairs)	0.060	0.060			0.060
431016	Other wall coverings (minor repairs)	0.033	0.033			0.033
431099	Other repair and building materials (minor repairs)	0.425	0.425			0.425
432101	Services of plumbers (minor repairs)	0.057	0.057			0.057
432201	Services of electricians (minor repairs)	0.031	0.031			0.031
432301	Maintenance services for heating systems (minor repairs)	0.038	0.038			0.038
432401	Services of painters (minor repairs)	0.021	0.021			0.021
432501	Services of carpenters (minor repairs)	0.012	0.012			0.012
432901	Other services for maintenance and repair of the dwelling (minor repairs)	0.196	0.196			0.196
5111312	Ceramic tiles (major repairs)	0.044	0.044			0.044
5111351	Major repairs	0.003	0.003			0.003
5111302	Stones, small blocks (major repairs)	0.018	0.018			0.018
5111304	Glass (major repairs)	0.141	0.141			0.141
5111349	Other materials (major repairs)	0.283	0.283			0.283
5111314	Other floor coverings (major repairs)	0.022	0.022			0.022
5111316	Other wall coverings (major repairs)	0.005	0.005			0.005
5111315	Other finishing materials (major repairs)	0.081	0.081			0.081
5111313	Parquet (major repairs)	0.018	0.018			0.018
5111301	Wood (major repairs)	0.291	0.291			0.291
5111311	Wallpapers (major repairs)	0.000	0.000			0.000
5111310	Paints (major repairs)	0.015	0.015			0.015

Table 3.79 HBS data on maintenance and repair expenditures for apartments, 2020 (euros per square metre)

HBS	Expenditures	Costs for owners and tenants	Weighted costs for owners	Weighted costs for tenants	Tenant's cost for owners	Intermediate consumption
		1= 2+3	2	3	4	5=2-4
	Total costs	3.483	3.294	0.190	0.746	2.548
431001	Wood (minor repairs)	0.226	0.188	0.038	0.122	0.066
431002	Stones, small blocks (minor repairs)	0.011	0.011			0.011
431004	Glass (minor repairs)	0.042	0.041	0.002	0.005	0.036

HBS	Expenditures	Costs for owners and tenants	Weighted costs for owners	Weighted costs for tenants	Tenant's cost for owners	Intermediate consumption
431005	Metal (minor repairs)	0.011	0.011			0.011
431006	Cement, putty (minor repairs)	0.160	0.144	0.016	0.045	0.099
431007	Roofing material (minor repairs)	0.041	0.040	0.002	0.005	0.034
431008	Isolation material (minor repairs)	0.122	0.074	0.048	0.065	0.009
431009	Sanitary ware (minor repairs)	0.199	0.190	0.009	0.036	0.154
431010	Paints (minor repairs)	0.352	0.333	0.018	0.053	0.280
431011	Wallpapers (minor repairs)	0.121	0.120	0.002	0.009	0.111
431012	Ceramic tiles (minor repairs)	0.020	0.020			0.020
431013	Parquet (minor repairs)	0.144	0.144			0.144
431014	Other floor coverings (minor repairs)	0.045	0.045			0.045
431015	Other finishing materials (minor repairs)	0.060	0.059	0.001	0.005	0.054
431016	Other wall coverings (minor repairs)	0.004	0.004			0.004
431099	Other repair and building materials (minor repairs)	0.464	0.414	0.050	0.180	0.234
432101	Services of plumbers (minor repairs)	0.098	0.094	0.004	0.022	0.071
432201	Services of electricians (minor repairs)	0.009	0.009			0.009
432301	Maintenance services for heating systems (minor repairs)	0.010	0.010			0.010
432401	Services of painters (minor repairs)	0.076	0.076			0.076
432501	Services of carpenters (minor repairs)	0.031	0.031			0.031
432901	Other services for maintenance and repair of the dwelling (minor repairs)	0.521	0.521		0.199	0.322
5111312	Ceramic tiles (major repairs)	0.053	0.053			0.053
5111351	Major repairs	0.001	0.001			0.001
5111302	Stones, small blocks (major repairs)	0.025	0.025			0.025
5111304	Glass (major repairs)	0.145	0.145			0.145
5111349	Other materials (major repairs)	0.036	0.036			0.036
5111314	Other floor coverings (major repairs)	0.077	0.077			0.077
5111316	Other wall coverings (major repairs)	0.007	0.007			0.007
5111315	Other finishing materials (major repairs)	0.048	0.048			0.048
5111313	Parquet (major repairs)	0.029	0.029			0.029
5111301	Wood (major repairs)	0.265	0.265			0.265
5111311	Wallpapers (major repairs)	0.007	0.007			0.007
5111310	Paints (major repairs)	0.027	0.027			0.027

The expenditures connected with the dwellings of owner and tenant households were analysed separately to distinguish the intermediate and final consumption of household dwelling services. The analysis was carried out on the consumption of goods and services for repair and maintenance per square metre of dwelling area. The expenditures of tenants on repair and maintenance per square metre of dwelling area and a part of similar expenditures of the owners

are taken into account as final consumption expenditure. Owners' expenditures on repair and maintenance per square metre of dwelling area, except for a part of "tenant's" expenditures by owners, are recorded as intermediate consumption.

The calculation of the cost of maintenance and repair for empty dwellings is based on information on the area of empty houses (1.5 million m²) and data on the cost of minor maintenance and repair per square metre of houses (2.243 euros). Thus, the IC related to empty houses was calculated at 3.3 million euros (Table 3.77, row 5).

In estimating **dwelling-related insurance services**, SE used the total value for insurance services for apartments and houses in the households sector estimated within the national accounts in the financial corporations sector. The home interior insurance relates to individual consumption. The remainder (excluding home interior insurance) is divided between actual and imputed rentals, and houses and apartments in the proportion obtained from the Population and Housing Census area data.

Estimation of **FISIM** on loans to owners of dwellings is based on reliable data collected and provided by Eesti Pank. These data include information about loans from business banks using stocks and weighted average interest rates depending on the maturity of loans, and also data about the leasing portfolio of big leasing companies (members of the Estonian Leasing Association) with a breakdown by leasing objects and by type of leasing. The methodology of allocation of FISIM to users is described in Section 3.17.4. FISIM is divided between actual and imputed rentals, and houses and apartments in the proportion obtained from the Population and Housing Census area data.

Table 3.80 Area ratio used to divide FISIM and insurance services

Owner-occupied apartments	0.414
Owner-occupied houses	0.466
Rented apartments	0.079
Rented houses	0.041
Total	1.000

Taxes paid by owners of dwellings on the value of land associated with dwellings and garages are calculated based on data from the Tax and Customs Board declarations. The methodology of estimation is described in Section 4.8.

CFC is calculated separately for actual and imputed dwellings, for houses and apartments due to their different service life and, as a result, different depreciation rates. The methodology of these estimations is described in Section 4.12.7.

The calculation of CFC for empty houses is based on information on the area of empty private houses in the total area of private houses (survey of the Experimental Statistics Team). This share is 5.7%. Using this data and the CFC for private houses (264.2 million euros), the CFC related to empty houses was calculated at 15.1 million euros (Table 3.77, row 11).

Net operating surplus (NOS) for houses (UCM) is calculated as a total of the average value of the net stock of houses and the average value of land associated with houses multiplied by the real rate of return on owner-occupied dwellings and associated land. According to the consensus of the Task Force on estimation methods for dwellings, the constant real annual rate of return on dwellings and land is 2.5%.

The average value of the net stock of owner-occupied dwellings is estimated as the average net stock at the beginning and end of the year. The calculation methods for estimating the net stock for dwelling services are described in Section 4.12.1. The average price of land was taken from the estimation of land value. In Estonia, the estimation of land value was carried out using the direct method and three main administrative data sources:

- Estonian Land Board: cadastre data about quantities, average/median prices.
- Estonian Environmental Agency: an additional data source with annual detailed information about the distribution of forest areas, ownership, use, characteristics and relative market prices. It reports changes in forest land area from 1942. Data used in land estimation: forest land quantities and average prices.
- Tax and Customs Board: land tax data.

Table 3.81 shows the calculation of net operating surplus for houses and associated land.

Table 3.81 Calculation of net operating surplus for houses and associated land

Variable	Row number	Value
Average annual net housing stock of houses, million euros	1	13,950.767
Average annual net housing stock of empty houses, million euros	2	811.363
Average annual net housing stock of seasonally occupied houses, million euros	3	177.197
Seasonality coefficient for seasonally occupied dwellings, %	4	0.538
Average annual net housing stock of houses, adjusted with the net housing stock of empty and seasonally occupied houses, million euros	$5=1-2-3*4$	13,044.072
Number of houses, million	6	0.260
Area of land associated with a house, square metres	7	668.392
Price of land associated with dwellings, euros per square metre	8	23.182
Average annual net stock of land associated with houses, adjusted with the net stock of land associated with empty and seasonally occupied houses, million euros	$9=6*7*8$	4,035.740
Average annual net housing stock of houses and stock of associated land, adjusted with the stock of empty and seasonally occupied houses and associated land, million euros	$13=5+12$	17,079.812
Net operating surplus of houses and associated land, million euros	$14=13*0,025$	426.995
CFC related to empty and seasonally occupied houses	15	15.145
IC related to empty and seasonally occupied houses	16	3.296
Net operating surplus of houses and associated land, corrected with IC and CFC of empty and seasonally occupied houses, million euros	$17 = 14 - 15 - 16$	408.554

The above calculation result gives zero output from empty houses and partial output from seasonally used houses.

3.19. Professional, scientific and technical activities (NACE Rev. 2 Section M)

Introduction

This section provides information on specialised professional, scientific and technical activities (NACE Rev. 2 Section M). The compilation method for the output of own-account R&D is also described.

The value added of NACE Rev. 2 Section M amounted to 1,754.2 million euros with a 5.7% share in the GNI in 2021 (see Table 3.82).

Table 3.82 Contribution of NACE Section M to GDP and GNI by NACE Division, 2021

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Legal and accounting activities; activities of head offices; management consultancy activities (69_70)					
output	1,213.1				
intermediate consumption	471.3				
value added	741.8	42.3	2.7	2.4	2.4
Architecture and engineering activities; technical testing and analysis (71)					
output	526.8				
intermediate consumption	244.2				
value added	282.6	16.1	1.0	0.9	0.9
Scientific research and development (72)					
output	389.0				
intermediate consumption	103.7				
value added	285.2	16.3	1.0	0.9	0.9
Advertising and market research (73)					
output	588.3				
intermediate consumption	358.1				
value added	230.2	13.1	0.8	0.7	0.7
Other professional, scientific and technical activities; veterinary activities (74_75)					
output	877.5				
intermediate consumption	663.2				
value added	214.3	12.2	0.8	0.7	0.7
Total					
output	3,594.6				
intermediate consumption	1,840.4				
value added	1,754.2	100.0	6.4	5.6	5.7

In the SUT framework, NACE Rev. 2 Section M is divided into 13 activities belonging to the non-financial corporations, general government and households sectors.

Activity code	Activity	Sector	Type of producer	Source
M.M.69_70	Legal and accounting activities; activities of head offices; management consultancy activities	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, energy and fuel survey, foreign trade statistics, BOP
M.M.71	Architectural and engineering activities; technical testing and analysis	S.11	Market	As for S.11
M.M.72	Scientific research and development	S.11	Market	As for S.11
M.M.73	Advertising and market research	S.11	Market	As for S.11
M.M.74_75	Other professional, scientific and technical activities; veterinary activities	S.11	Market	As for S.11
N.M.69_70	Accounting; management consultancy activities	S.13	Non-market	PSFS
N.M.71	Architectural and engineering activities; technical testing and analysis	S.13	Non-market	PSFS
N.M.72	Scientific research and development	S.13	Non-market	PSFS
H.M.69_70	Legal, accounting, management consultancy activities	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)
H.M.71	Architectural and engineering activities; technical testing and analysis	S.14	Market	As for H.M.69_70
H.M.72	Scientific research and development	S.14	Market	As for H.M.69_70
H.M.73	Advertising and market research	S.14	Market	As for H.M.69_70
H.M.74_75	Other professional, scientific, technical, veterinary activities	S.14	Market	As for H.M.69_70

The value added of NACE Rev. 2 Section M was generated by corporations (81.8%), the general government (14.1%) and households (4.1%); see Table 3.83.

Table 3.83 Breakdown of NACE Section M by NACE Division and by institutional sector, 2021
(million euros)

NACE Division	Total	Institutional sector					
		S.11	% of S.11 in division	S.13	% of S.13 in division	S.14	% of S.14 in division
Legal and accounting activities; head offices; management consultancy activities (69_70)							
output	1,213.1	1,127.1		12.5		73.5	
intermediate consumption	471.3	457.0		4.1		10.1	
value added	741.8	670.0	90.3	8.4	1.1	63.4	8.5
Architecture and engineering activities; technical testing and analysis (71)							
output	526.8	510.3		10.7		5.8	
intermediate consumption	244.2	239.0		2.5		2.6	
value added	282.6	271.3	96.0	8.2	2.9	3.2	1.1
Scientific research and development (72)							
output	389.0	103.2		284.9		0.9	
intermediate consumption	103.7	49.1		54.2		0.4	
value added	285.2	54.1	19.0	230.7	80.9	0.5	0.2
Advertising and market research (73)							
output	588.3	585.5		0.0		2.8	
intermediate consumption	358.1	356.7		0.0		1.4	
value added	230.2	228.7	99.4	0.0	0.0	1.5	0.6
Other professional, scientific, technical, veterinary activities (74_75)							
output	877.5	870.6		0.0		6.9	
intermediate consumption	663.2	659.7		0.0		3.5	
value added	214.3	210.9	98.4	0.0	0.0	3.4	1.6
Total							
output	3,594.6	3,196.6		308.1		89.9	
intermediate consumption	1,840.4	1,761.6		60.8		18.0	
value added	1,754.2	1,435.0	81.8	247.3	14.1	71.9	4.1

Data sources

The output, intermediate consumption and value added of the non-financial corporations sector are calculated based on data from the annual Structural Business Statistics survey. The SBS data collection and processing methodology is described in Chapter 10.

Other sources used for estimating intermediate consumption include foreign trade statistics, BOP data on the import and export of services, and the energy and fuel survey. In addition, the

annual reports of enterprises from the Business Register are used, as they provide useful information for the compilers of NA. For more information, see Chapter 10.

The PSFS system is the main data source used for estimating output in the general government sector.

Tax declarations on the business income of sole proprietors received from the Tax and Customs Board are the main source of data on unincorporated enterprises in the households sector. According to this administrative data source, the number of registered sole proprietors in professional, scientific and technical activities (NACE M) was 1,670, which accounted for 8.4% of the total number of sole proprietors in 2021.

Output

The SBS survey Module D “Breakdown of turnover” for professional, scientific and technical activities provides information on revenue by kind of activity at the level of 2-digit codes of NACE Rev. 2. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

The estimation methodology used for unincorporated enterprises in the households sector is described in the section below.

The methodology for estimating non-market output is the same as the one used for NACE Section O (see Section 3.21).

Intermediate consumption

The compilation method for intermediate consumption of non-financial corporations is described in Section 3.9. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

The methodology for estimating intermediate consumption of general government industries is the same as the one used for NACE Section O (see Section 3.21).

Estimation methodology for unincorporated enterprises

For unincorporated enterprises, tax declarations on the business income of sole proprietors from the Tax and Customs Board are the main data source. The estimation methodology for unincorporated units is described in Table 3.84

Table 3.84 Estimation methodology based on tax declarations on business income of sole proprietors (Form E)

Form E code	Form E item description		Comments
1	Business income		
1.1	Income from sale or intermediation of goods and service provision	+	
1.2	Rental income	+	
1.3	Royalties	+	
1.4	Income or gain from transfer of property used in business Income from the transfer of assets acquired through the takeover of a business		
1.5	Market price of the property taken into personal use		
1.6	Benefits and grants received in connection with business		
1.7	Insurance indemnities received in case the insurance premiums or acquisition cost of insured assets have been deducted from business income		
1.8	Financial income		
1.9	Taxes refunded by the Tax and Customs Board		
1.10	Other income	+	50% based on NA expert's assumptions
1.11	Total business income (lines 1.1 to 1.10) = Output		
2	Expenses related to business		
2.1	Acquisition cost of fixed assets		
2.1.1	including costs of improvement and upgrading		
2.2	Acquisition cost of fixed assets not reflected on line 2.1		
2.3	Goods and services acquired	+	12.3–29.0% for trade margins
2.4	Fringe benefits granted to employees		
2.5	Income tax paid on fringe benefits granted to employees		
2.6	Social tax paid on fringe benefits granted to employees		
2.7	Salaries, wages and other remuneration granted to employees		
2.8	Social tax paid on payments made to employees		
2.9	Unemployment insurance premiums paid on payments made to employees		
2.10	Other state and local taxes (except income tax, social tax paid on business income and contributions to mandatory funded pension)		
2.11	Other expenses	+	10% based on NA expert's assumptions
2.12	Total expenses = Intermediate consumption		

For all NACE activities except trade, output value (P.11) is calculated as the sum of income from the sale and intermediation of goods and service provision (code 1.1), rental income (1.2), royalties (1.3) and other income (50% of 1.10), based on NA expert's assumptions. In trade activities (NACE Divisions 45, 46 and 47), output value is adjusted as follows to arrive at the trade margin concept:

$$P.11 = \text{Turnover} - \text{Turnover}/MC,$$

where $MC = \text{trade margin as coefficient} = \text{trade margin}/100 + 1$

For goods purchased for resale, the trade margin percentages from the questionnaire "Economic activity" collected from trade enterprises under the statistical activity 20007 "Economic indicators of enterprises" were used. Trade margin data by trade activity are available in Statistics Estonia's statistical database – table KM0107: "Trade enterprises' assets, liabilities and trade margin by economic activity".

For all NACE activities except trade, intermediate consumption is calculated as the sum of goods and services acquired (code 2.3) and other expenses (10% of 2.11), based on NA expert's assumptions. In trade activities, goods and services acquired are adjusted with a coefficient (11.3–28.7%) to exclude the costs of goods purchased for resale.

Adjustments to output and intermediate consumption made for exhaustiveness are explained in Chapter 7.

Adjustments made to basic data

A number of adjustments to output and intermediate consumption are made for differences in concepts, exhaustiveness and when balancing the supply and use tables. The total amount of adjustments made to the value added of professional, scientific and technical activities in 2021 was 425.5 million euros, or 32.0% compared to initial estimates.

Table 3.85 NACE Section M by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	3,208.4	1,879.8	1,328.6
..Surveys and censuses	0.0	0.0	0.0
..Administrative records	282.0	77.9	204.1
..Combined data	2,817.2	1,801.9	1,015.4
..Extrapolations and models	109.2	0.0	109.2
..Other	0.0	0.0	0.0
Adjustments	386.2	-39.3	425.5
..Data validation	62.8	-22.9	85.8
..Conceptual	214.8	-15.6	230.4
..Exhaustiveness	108.5	-0.8	109.3
..Balancing	0.0	0.0	0.0
Final estimate	3,594.6	1,840.5	1,754.2

Research and development

Separate local KAUs are set up for research and development expenditure in major organisations involved in R&D activities.

The following steps are taken.

- a) R&D by specialised business research laboratories and institutes is estimated on the basis of revenues reported under business statistics.
- b) R&D for use within the same enterprise is valued on the basis of total production costs (plus a mark-up – except for non-market producers – for net operating surplus or mixed income). Own-account R&D for market producers is estimated by adjusting the running costs on R&D from the Research and Development survey with subsidies on production and R&D produced for the market. An additional adjustment is made for own-account software, the consumption of fixed capital and operating surplus. The consumption of fixed capital is derived from the investments in fixed assets that are used in the production of R&D. The estimates for operating surplus for all activities are based on NACE Division 72 for non-financial enterprises and are included in the adjustment for exhaustiveness. There is no own-account R&D estimated for NACE Division 72, as all the production there is presumed to be intermediate consumption for other market producers. Therefore, there is also no capitalisation of R&D in NACE Division 72, and the R&D to be capitalised in other NACE divisions is recorded under other adjustments.
- c) R&D by government units and non-profit research institutes is valued as the sum of costs of production as reported in the Research and Development survey. The revenues from the sale of R&D by these units are considered as market output and hence excluded as other adjustments from the capitalisation of R&D. An additional adjustment is made for the intermediate consumption of R&D to be classified as GFCF. No such adjustment is made for NACE Division 72. The data from the Research and Development survey are checked against the detailed data from PSFS for possible discrepancies.

The templates agreed by the Task Force on Capitalisation of Research and Development in National Accounts (DMES 2012/11/08) are used to calculate output and GFCF in R&D (see Tables 3.86 and 3.87).

Table 3.86 Output of R&D (million euros)		S11		S12		S13		S14		S15		TOTAL	
		+	-	+	-	+	-	+	-	+	-	+	-
1	Frascati Manual Intramural expenditures on R&D	300.8		11.4		207.0		-		7.8		527.0	
2	Subtract payments for licences to use intellectual products (principally R&D assets, such as patents) that should be recorded as GFCF		3.7		1.2		0.0		-		0.0		4.9
3	Subtract expenditure on own-account production of software	-88.0		-11.2		0.0		-		0.0		-99.3	
4	Add payments to postgraduate students not included in FM data	-		-		-		-		-		-	
5	Subtract capital expenditures		39.5		-1.0		14.5		-		0.2		53.2
6	Add other taxes on production not included in FM data	-		-		-		-		-		-	
7	Subtract other subsidies on production		46.6		-		-		-		-		46.6
8	Add extramural purchases of R&D that should be recorded as intermediate consumption.	57.6		0.7		-		-		-		58.3	
9	Sub-total (1 to 8): current expenditures	270.4	89.8	0.9	0.2	207.0	14.5	-	-	7.8	0.2	486.0	104.7
10	Add estimate of consumption of fixed capital plus a return to capital (for non-market producers only consumption of fixed capital):												
11	- Option 1: As percentage of current expenditures (line 9) or compensation of employees	-		-		-		-		-		-	
12	- Option 2: As cost of capital services measured with a PIM	33.5		1.1		17.5		-		0.3		52.4	
13	Adjustment for exhaustiveness	0		0.0		-		-		-		0	
14	Other adjustments	9.3		0.9		1.0		-		-3.1		7.1	
15	Balance: Output of R&D		223.4		2.7		211.0		-		4.8		441.8

Table 3.87 GFCF of R&D
(million euros)

		S11		S12		S13		S14		S15		TOTAL	
		-	+	-	+	-	+	-	+	-	+	-	+
1	R&D output		223.3		2.7		211.0		-		4.8		441.8
2	Add imports of R&D		22.0		0.4		0.4		-		0.1		22.9
3	Add trade margins	-		-		-		-		-		-	
4	Add taxes on products	-		-		-		-		-		-	
5	Subtract subsidies on products	-		-		-		-		-		-	
6	Subtract extramural purchases of R&D that should be recorded as intermediate consumption	57.6		0.7		-		-		-		58.3	
7	Subtract acquisitions of R&D not expected to provide a benefit	-		-		-		-		-		-	
8	Subtract changes in inventories of finished R&D	-		-		-		-		-		-	
9	Subtract exports of R&D	35.8		0.0		0.1		-		0.0		35.9	
10	Add net purchases of R&D between domestic sectors		24.4		0.7		-24.5		-		-0.6		0.0
11	Sub-total	93.4	269.7	0.7	3.8	0.1	186.9	-	-	0.0	4.3	94.1	464.7
12	Balance: Total GFCF of R&D	176.3		3.1		186.8		-		4.3		370.6	
13	Add/subtract capital transfers of R&D assets between sectors in capital account	-	-	-	-	-	-	-	-	-	-	-	-

Own-account software is excluded from the capitalisation of R&D for all financial enterprises and for non-financial enterprises in NACE Division 62. This correction is not made for other units as there does not seem to be a significant amount of own-account software reported under the Frascati Survey.

Payments for licenses to use intellectual products that should be recorded as GFCF and subsidies on production are calculated based on data from the Frascati Survey. Extramural purchases that should be recorded as intermediate consumption are calculated based on data from the SBS.

The recommendations of the Task Force on the Capitalisation of R&D are applied as outlined in the “Manual on Measuring Research and Development”. In most cases, the exact suggestions made by the Task Force have been applied as there have been no studies on the precise nature of R&D in Estonia.

For the estimation of consumption of fixed capital plus a return on capital, option 2 with the PIM method was chosen. The Research and Development survey enables SE to distinguish 5 separate asset classes:

- buildings;
- machinery and equipment;
- computers;
- immaterial assets;
- other assets.

The application of the PIM method and the relevant service lives are described in Section 4.12. The treatment of GFCF of R&D is addressed in Section 5.10.3.15.

3.20. Administrative and support service activities (NACE Rev. 2 Section N)

Introduction

This section describes NACE Rev. 2 Section N, which includes a variety of activities that support general business operations. The value added of NACE Rev. 2 Section N amounted to 952.8 million euros and to 3.1% of the GNI in 2021 (see Table 3.88).

Table 3.88 Contribution of NACE Section N to GDP and GNI by NACE Division, 2021

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Rental and leasing activities (77)					
output	439.3				
intermediate consumption	201.5				
value added	237.8	25.0	0.9	0.8	0.8
Employment activities (78)					
output	378.7				
intermediate consumption	157.9				
value added	220.8	23.2	0.8	0.7	0.7
Travel agency, tour operator and other reservation service and related activities (79)					

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
output	101.3				
intermediate consumption	64.8				
value added	36.5	3.8	0.1	0.1	0.1
Security and investigation activities; services to buildings and landscape activities; office administrative, office support and other business support activities (80_82)					
output	803.5				
intermediate consumption	345.8				
value added	457.7	48.0	1.7	1.5	1.5
Total					
output	1,722.8				
intermediate consumption	770.0				
value added	952.8	100.0	3.5	3.0	3.1

In the SUT framework, NACE Section N is divided into eight activities belonging to the non-financial corporations and households sectors.

Activity code	Activity	Sector	Type of producer	Source
M.N.77	Rental and leasing activities	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, energy and fuel survey, foreign trade statistics, BOP
M.N.78	Employment activities	S.11	Market	As for S.11
M.N.79	Travel agency, tour operator and other reservation service and related activities	S.11	Market	As for S.11
M.N.80_82	Security and investigation; services to buildings and landscape activities; office administrative and other business support activities	S.11	Market	As for S.11
H.N.77	Rental and leasing activities	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)
H.N.78	Employment activities	S.14	Market	As for S.14
H.N.79	Travel agency, tour operator and other reservation service and related activities	S.14	Market	As for S.14
H.N.80_82	Security and investigation; services to buildings and landscape activities; office administrative and other business support activities	S.14	Market	As for S.14

The value added of NACE Rev. 2 Section N was generated by corporations (99.0%) and households (1.0%); see Table 3.89.

Table 3.89 Breakdown of NACE Rev. 2 Section N by NACE Division and by institutional sector, 2021
(million euros)

NACE Division	Total	Institutional sector			
		S.11	% of S.11 in division	S.14	% of S.14 in division
Rental and leasing activities (77)					
output	439.3	438.4		0.9	
intermediate consumption	201.5	201.1		0.5	
value added	237.8	237.3	99.8	0.4	0.2
Employment activities (78)					
output	378.7	378.5		0.2	
intermediate consumption	157.9	157.8		0.0	
value added	220.8	220.7	99.9	0.1	0.1
Travel agency, tour operator and other reservation service and related activities (79)					
output	101.3	100.4		1.0	
intermediate consumption	64.8	64.3		0.5	
value added	36.5	36.0	98.7	0.5	1.3
Security and investigation activities; services to buildings and landscape activities; office administrative, office support and other business support activities (80_82)					
output	803.5	787.9		15.7	
intermediate consumption	345.8	338.4		7.4	
value added	457.7	449.5	98.2	8.2	1.8
Total					
output	1,722.8	1,705.1		17.7	
intermediate consumption	770.0	761.6		8.4	
value added	952.8	943.6	99.0	9.2	1.0

Data sources

The output, intermediate consumption and value added of the non-financial corporations sector are calculated based on data from the annual Structural Business Statistics survey. The SBS data collection and processing methodology is described in Chapter 10.

Other sources used for estimating intermediate consumption include foreign trade statistics, BOP data on the import and export of services, the energy and fuel survey. In addition, the annual reports of enterprises received from the Business Register are used as well, as they provide useful information for NA compilers. For more information, see Chapter 10.

Tax declarations on the business income of sole proprietors received from the Tax and Customs Board are the main source of data on unincorporated enterprises. According to this administrative data source, the number of registered sole proprietors in administrative and

support service activities (NACE Rev. 2 Section N) was 380, or 1.9% of the total number of sole proprietors in 2021.

Output

SBS survey Module D “Breakdown of turnover” provides information on the revenue from rental and leasing activities, employment, travel agency, tour operator and other related activities; security and investigation activities; services to buildings and landscape activities; office administrative, office support and other business support activities, as well as from other activities at the 2-digit level of NACE Rev. 2. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

The estimation methodology for unincorporated enterprises is described in Section 3.19.

The income of persons employed through temporary labour agencies is counted in the SBS as salary in the industry in which the agency operates, rather than in the industries in which the persons actually work. Consequently, in the latter industries, fees paid to the agency for providing labour are counted as intermediate consumption rather than as compensation of employees. Outsourced work is counted as services provided.

The output of tour operators is measured on a gross basis by the full expenditures made by tourists. The output of travel agencies is measured on a net basis as the value of fees and commissions charged for the intermediation of packaged tours, transport tickets, etc.

Operational leasing is treated as a service and measured by the value of rent paid. Operational leasing expenditure is treated as intermediate consumption and/or HFCE.

Intermediate consumption

The compilation method for intermediate consumption is described in Section 3.9. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

Adjustments made to basic data

A number of adjustments to output and intermediate consumption are made for differences in concepts, exhaustiveness and when balancing the supply and use tables. The total amount of adjustments made to the value added of administrative and support service activities in 2021 amounted to -74.8 million euros, or -7.3% compared to initial estimates (see Table 3.90).

Table 3.90 NACE Section N by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	1,799.9	772.3	1,027.6
..Surveys and censuses	0.0	0.0	0.0
..Administrative records	12.2	6.2	6.0
..Combined data	1,787.7	766.1	1,021.6
..Extrapolations and models	0.0	0.0	0.0
..Other	0.0	0.0	0.0
Adjustments	-77.1	-2.3	-74.8
..Data validation	10.4	-33.3	43.7
..Conceptual	-149.2	27.5	-176.7
..Exhaustiveness	61.7	3.5	58.2
..Balancing	0.0	0.0	0.0
Final estimate	1,722.8	770.0	952.8

3.21. Public administration and defence; compulsory social security (NACE Rev. 2 Section O)

Introduction

The output, intermediate consumption and value added for NACE Rev. 2 Section O in 2021 are presented in Table 3.91.

Value added was estimated at 1,697 million euros, or 5.5% of the GNI.

Table 3.91 Contribution of NACE Section O to GDP and GNI, 2021

NACE Section	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Public administration and defence; compulsory social security (84)					
output	2,575.4				
intermediate consumption	878.4				
value added	1,697.0	100.0	6.2	5.4	5.5

In Estonia, data on NACE Rev. 2 Section O activities of public administration, defence and social security are included in one industry O.84 belonging to the general government sector.

Government finance statistics are based on detailed data from the Ministry of Finance's information system of PSFS, containing accrual-based accounting data. The public sector accounting principles (including uniform chart of accounts) are regulated by the General Rules for State Accounting. The guidelines were enforced from 1 January 2004, applying at first to general government units, and, starting from 1 January 2005, were expanded to other public sector units. For 2004–2007, reporting had to be done quarterly. Starting from 2008, all units of the general government sector have to submit their reports on a monthly basis.

The Ministry of Finance establishes accounting principles and terms of reporting for all institutions of the Estonian public sector, including commercial enterprises controlled by public sector entities. The Ministry of Finance is responsible for the consolidated financial statements of the state, the government sector and the public sector. The annual report is presented by the Ministry of Finance to the Government of Estonia, which submits it to the Parliament.

Reports presented in the PSFS system consist of account combinations and their positions. An account combination includes the account code, counterpart code, code of function, source code and cash-flow code. Due to electronic reporting in the database, the information of the reporting unit (code of account owner) is also added automatically. The interpretation of the account combinations in the information system complicates the process of compiling national accounts.

The information needed for producing government finance statistics is transferred from the information system run by the State Shared Service Centre into the database created for that purpose by Statistics Estonia. The information is processed by an automated system, which uses the accounting data and lists of rules (mainly bridge tables) defined by a statistician as input. There are separate bridge tables and processes for adding codes of ESA 2010 institutional sectors and transactions, COFOG, NACE Rev. 2 and CPA classifications.

Output

The output value is estimated as the sum of intermediate consumption, compensation of employees, consumption of fixed capital and other taxes on production.

The main items of expenditure used for output estimation have the following structure: labour costs (account class 50), operating expenses (account class 55), other operating expenses (account class 60) and a part of account classes 15, 20, 41, 45 and 65. Expenditure accounts classified by ESA 2010 transactions are presented in Table 3.92.

Table 3.92 Expenditure accounts classified by ESA 2010 transactions

Account	Name of account	Transaction	Clarification
155700	Non-depreciated tangible fixed assets	P.2	books
206040	Provisions for pensions	D.1221	special pensions
413700	Social tax paid by state in special cases	D.121	only conscript social tax, other as D.62
413830	Conscript allowance	D.11	
413860	Legal service allowance	P.2	
414099	Social benefits to public sector employees	D.1222	
45	Other grants	P.2	only purchases of services
50	Labour costs		
500	Salaries	D.11	except special pensions and D.1222
505	Fringe benefits	D.11	except insurance premiums
506	Taxes related to labour costs	D.121	except income tax on fringe benefits
55	Operating expenses		
5500	Administrative expenses	P.2	
5502	Research and development expenses	P.2	except R&D treated as P.51
5503	Travel expenses (except training trips)	P.2, D.11	except insurance premiums

Account	Name of account	Transaction	Clarification
5504	Training expenses (including training trips)	P.2, D.11	except insurance premiums
5511	Operating expenses of properties and buildings	P.2	except insurance premiums
5512	Operating expenses of facilities	P.2	except insurance premiums
5513	Operating expenses of vehicles	P.2	except insurance premiums; lease payments treated as P.51
5514	IT and communication expenses	P.2	except IT accounts treated as P.51
5515	Operating expenses of inventory	P.2	
5516	Operating expenses of machinery and equipment	P.2	except insurance premiums
5521	Food and catering	P.2	except accounts treated as D.632
5522	Medical expenses	P.2	except accounts treated as D.632
5523	Cultural expenses	P.2	except insurance premiums
5524	Learning materials and training expenses	P.2	except accounts treated as D.632 or D.7
5525	Communication, cultural and public event expenses	P.2	except accounts treated as P.51
552620	Rehabilitation	P.2	The owner is the Unemployment Insurance Fund
5527	General public services expenses	P.2	
5529	Materials, consumables and supplies	P.2	
5531	Defence equipment and material	P.2	except accounts treated as P.51
5532	Uniform expenses	P.2	
5539	Other special equipment and material	P.2	
5540	Other operating expenses	P.2, D.11	
60	Other operating expenses		
600000	Other services	D.1, P.2	expenses attached to state secrets
601	Tax, fee and fine expenses		
601000	VAT on operating expenses	P.2	except VAT on P.5 and D.632
601010	Land tax	D.29	
601040	Customs duty	P.2	
601060	Other taxes	P.2, D.29	except D.51
601070	State duties	P.2, D.29	except fees treated as P.51
601080	Natural resource tax	D.29	except fees treated as D.45
65	Financial revenues and expenses		
650600	Interest expenses on concession	P.2	PPP payments of the Tallinn City Government
658950	Other financial expenses	P.2	except D.41

Compensation of employees

Compensation of employees includes wages and salaries plus employers' social contributions, both actual and imputed.

Wages and salaries (D.11) are recorded mostly in account sets 500 and 505, excluding account group 5009 "Special pensions" and account 505010 "Covered insurance costs". Daily

allowances D.111 are recorded under account groups 5503 and 5504. From class 55, accounts 554031 “Health promotion costs” and 550315 “Foreign service allowance expenses” are also treated as D.11. Additionally, part of account 600000 is added to D.11 estimation. Expenses attached to state secrets are related to the state specific units. The estimation of D.11 for these units is based on the data received from the Tax and Customs Board.

Employers’ actual social contributions D.121 include social tax (health and pension insurance) and unemployment insurance premium (unemployment insurance). In the PSFS, employers’ actual social contributions are mainly recorded under account set 506 with one exception: account 506030 “Income tax on fringe benefits” is recorded under D.51. Additionally, part of account 413700 and part of 600000 are treated as D.121.

Employers’ imputed pension contributions D.1221 cover special pensions (account 206040, cash-flow code 06 “Repayment of obligation”). Special pensions include officers’ additional pension for ancillary years, state pensions by special acts and state additional pension (President, members of Parliament, Auditor General, Chief Justice, Judges, Chancellor of Justice, police officers and members of the Defence Forces).

Employers’ imputed non-pension contributions D.1222 consist of sickness benefits and redundancy payments to employees. **The main sources for these are declarations of income and social tax received from the Tax and Customs Board.** D.1222 also includes **other social allowances for civil servants (account 414099).**

Intermediate consumption

The main components of intermediate consumption cover operating expenses (account class 55), excluding daily and foreign service allowances, insurance premiums, accounts treated as gross fixed capital formation, social transfers in kind or current transfers.

According to ESA 2010 rules, *military expenditures* (account group 5531, except account 553100 “Munitions, rockets and mines” and 553160 “Defence equipment and material repair”), *financial lease* (account 551308 “Rent (land vehicles)” in case the counterpart sector is S.1102 or S.12), *IT costs* (accounts 551400 “IT hardware and equipment”, 551401 “Communication hardware and equipment”, 551410 “IT and communication software and equipment”), *R&D expenditures* (part of account 550200 “Research and development expenses”) and *expenditures on entertainment, literary and artistic originals* (part of accounts 552510 “Copyright and licence fees” and 552540 “Procurement expenses”) are included in gross fixed capital formation.

Additionally, other accounts are included in P.2: books treated as non-depreciated tangible fixed assets (account 155700, classification depends on the account owner), legal service allowance (account 413860), other grants treated as purchase of services (account class 45), part of expenses attached to state secrets (account 600000), part of tax, fee and fine expenses (account set 601) and part of financial expenses (account class 65).

Due to bookkeeping standards, operating expenses and acquisition of fixed assets are recorded without value added tax (VAT). The corresponding VAT is recorded on separate accounts 601000 and 601002. To follow ESA rules and estimate transactions P.2, P.5 and D.632 at purchasers’ prices, a special process elaborated by Statistics Estonia is used to allocate VAT amounts back to the operational costs and fixed assets. Depending on the kind of expenditure, the VAT rate in 2021 was 20%, 9% or 0%.

Other taxes on production

Other taxes on production (D.29) include land tax (account 601010), other taxes (part of account 601060), business and professional licenses (part of account 601070), pollution charges and fees on specific use of water (part of account 601080).

Adjustments made to basic data

In 2021, a number of adjustments were made to the initial estimates of output and IC for insurance premiums, R&D, entertainment, literary and artistic originals, and FISIM (conceptual adjustments). Non-life insurance premiums are excluded from intermediate consumption, but non-life insurance service charges are included. The total amount of adjustments made to output was 1.0 million euros (see Table 3.93). No adjustments were made to value added.

Table 3.93 NACE Section O by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	2,574.5	877.4	1,697.0
..Surveys and censuses	0.0	0.0	0.0
..Administrative records	2,085.8	877.4	1,208.4
..Combined data	0.0	0.0	0.0
..Extrapolations and models	488.7	0.0	488.7
..Other	0.0	0.0	0.0
Adjustments	1.0	1.0	0.0
..Data validation	0.0	0.0	0.0
..Conceptual	1.0	1.0	0.0
..Exhaustiveness	0.0	0.0	0.0
..Balancing	0.0	0.0	0.0
Final estimate	2,575.4	878.4	1,697.0

3.22. Education (NACE Rev. 2 Section P)

Introduction

The output, intermediate consumption and value added for NACE Rev. 2 Section P in 2021 are presented in **Error! Reference source not found.** The value added was estimated at 1,322.8 million euros, or 4.3% of the GNI.

Table 3.94 Contribution of NACE Section P to GDP and GNI, 2021

NACE Section	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Education (85)					
output	1,747.1				
intermediate consumption	424.2				
value added	1,322.8	100.0	4.8	4.2	4.3

In the SUT framework, four activities are distinguished for education, two of which are market activities of the non-financial corporations and households sectors, and two other non-market activities belong to the general government and NPISH sectors.

Activity code	Activity	Sector	Type of producer	Source
M.P.85	Education	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, energy and fuel survey, foreign trade statistics, BOP
N.P.85	Education	S.13	Non-market	PSFS
H.P.85	Education	S.14	Market	Tax declarations on business income of sole proprietors (Tax and Customs Board)
S.P.85	Education	S.15	Non-market	Modelled data based on annual reports from Business Register, annual survey of non-profit institutions

The education industry of the general government sector covers budgetary preschool child care institutions, basic schools, state and municipal secondary schools, schools for children with disabilities, sports, music and art schools, universities, etc. The units covered by the state budget or local government budget are invariably classified as government sector units. For other public sector units, the classification is based on the market/non-market test (see Section 3.1.2.3).

In national accounts, the non-profit institutions providing educational services are divided into market and non-market institutions. The distinction between market and non-market producers is made according to ESA 2010 principles. If the institution receives more than 50% of its income from the sale of services, it is classified as the market activity M.P.85 of non-financial corporations; otherwise, it is classified as the non-market activity S.P.85 of NPISH. Statistics Estonia has introduced automatic coding rules for institutional sectors, whereby the main educational organisations classified to the market sector include private universities, driving schools, language schools and the organisers of computer courses.

The value added of NACE Rev. 2 Section P was generated by the general government (90.5%), non-financial corporations (5.2%), NPISH (4.0%) and households (0.2%) sectors (see Table 3.95).

Table 3.95 Breakdown of NACE Section P by institutional sector, 2021
(million euros)

NACE Section	Total	Institutional sector							
		S.11	% of S.11 in division	S.13	% of S.13 in division	S.14	% of S.14 in division	S.15	% of S.15 in division
Education (85)									
output	1,747.1	138.5		1,514.3		6.5		87.7	
intermediate consumption	424.2	69.4		316.6		3.2		35.0	
value added	1,322.8	69.1	5.2	1,197.7	90.5	3.3	0.2	52.7	4.0

Data sources

The output, intermediate consumption and value added of the non-financial corporations sector are calculated based on data from the annual Structural Business Statistics survey. The SBS data collection and processing methodology is described in Chapter 10.

Other sources for the estimation of output and intermediate consumption include BOP statistics on the export and import of services, FTS, and the energy and fuel survey. In addition, the annual reports of enterprises received from the Business Register are used as well, as they provide useful information for NA compilers. For more information, see Chapter 10.

For the education industry in the general government sector, the PSFS system is the main data source used for output.

For unincorporated enterprises, tax declarations on business income of sole proprietors received from the Tax and Customs Board are the main source of data. According to this administrative data source, the number of registered sole proprietors in education (NACE P) amounted to about 500 or 2.5% of the total number of sole proprietors in 2021.

For NPISH, data on value added and intermediate consumption are modelled based on annual reports from the Business Register using the structures of the latest available annual surveys of non-profit institutions. Educational organisations created approximately 18% of the value added of the NPISH sector. For non-profit institutions treated as market producers (activity code M.P.85), output is calculated first on the basis of income. Value added is obtained by deducting intermediate consumption from output.

Output

The annual SBS survey Module D “Breakdown of turnover” for education provides detailed information about turnover with a breakdown by kind of activity at the level of 2-digit codes of NACE Rev. 2. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4. The estimation methodology for unincorporated enterprises is described in Section 3.19.

The methodology for estimating non-market output is the same as for NACE Rev. 2 Section O (see Section 3.21). As non-profit institutions serving households are non-market producers, their output calculations are made on the basis of costs (see Section 3.25).

Intermediate consumption

The compilation method for the intermediate consumption of non-financial corporations is described in Section 3.9. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

The methodology for estimating the intermediate consumption of the education industry belonging to the general government sector is described in Section 3.21, and that for NPISH in Section 3.25.

Adjustments made to basic data

A number of adjustments to output and intermediate consumption are made for differences in concepts, exhaustiveness and when balancing the supply and use tables. The total amount of adjustments made to the value added of education activities in 2021 was 13.7 million euros or 1.0% compared to initial estimates (see Table 3.96).

Table 3.96 NACE Section P by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	1,738.4	429.2	1,309.2
..Surveys and censuses	35.3	35.3	0.0
..Administrative records	1,439.0	326.1	1,112.8
..Combined data	124.9	67.8	57.1
..Extrapolations and models	139.2	0.0	139.2
..Other	0.0	0.0	0.0
Adjustments	8.7	-4.9	13.7
..Data validation	9.6	3.5	6.0
..Conceptual	-7.8	-8.7	0.9
..Exhaustiveness	7.0	0.2	6.8
..Balancing	0.0	0.0	0.0
Final estimate	1,747.1	424.2	1,322.8

3.23. Human health and social work activities (NACE Rev. 2 Section Q)

Introduction

The output, intermediate consumption and value added for NACE Rev. 2 Section Q in 2021 are presented in Table 3.97. Value added was estimated at 1,367.5 million euros, or 4.4% of the GNI.

Table 3.97 Contribution of NACE Section Q to GDP and GNI by NACE Division, 2021

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Human health activities (86)					
output	1,857.1				
intermediate consumption	673.3				
value added	1,183.9	86.6	4.3	3.8	3.8
Social work activities (87_88)					
output	266.1				
intermediate consumption	82.5				
value added	183.7	13.4	0.7	0.6	0.6
Total					
output	2,123.3				
intermediate consumption	755.8				
value added	1,367.5	100.0	5.0	4.3	4.4

In the SUT framework, NACE Rev. 2 Section Q is divided into three market activities of the non-financial corporations and households sectors, and three other non-market activities belonging to the general government and NPISH sectors.

Activity code	Activity	Sector	Type of producer	Source
M.Q.86	Human health activities	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, PRODCOM, energy and fuel survey, foreign trade statistics, BOP
M.Q.87_88	Residential care activities; social work activities	S.11	Market	As for M.Q.86
N.Q.86	Human health activities	S.13	Non-market	PSFS
N.Q.87_88	Residential care activities; social work activities	S.13	Non-market	PSFS
H.Q.86	Human health activities	S.14	Market	Tax declarations on business income of sole proprietors (ETCB)
S.Q.87_88	Residential care activities; social work activities	S.15	Non-market	Modelled data based on annual reports from Business Register, annual survey of non-profit institutions

The value added of NACE Rev. 2 Section Q was generated by the non-financial corporations (36.9%), general government (59.8%), households (0.9%) and NPISH (2.5%) sectors (see Table 3.98).

Table 3.98 Breakdown of NACE Section Q by NACE Division and by institutional sector in 2021
(million euros)

NACE Division	Total	Institutional sector							
		S.11	% of S.11 in division	S.13	% of S.13 in division	S.14	% of S.14 in division	S.15	% of S.15 in division
Human health activities (86)									
output	1,857.1	756.0		1,082.7		18.4		0.0	
intermediate consumption	673.3	285.3		381.1		6.9		0.0	
value added	1,183.9	470.7	39.8	701.7	59.3	11.5	1.0	0.0	0.0
Social work activities (87_88)									
output	266.1	55.7		153.1		0.9		56.4	
intermediate consumption	82.5	22.1		37.5		0.4		22.5	
value added	183.7	33.6	18.3	115.6	63.0	0.5	0.2	34.0	18.5
Total									
output	2,123.3	811.7		1,235.9		19.3		56.4	
intermediate consumption	755.8	307.4		418.6		7.3		22.5	
value added	1,367.5	504.3	36.9	817.3	59.8	11.9	0.9	34.0	2.5

The units covered by the state budget or local government budget are invariably classified as government sector units. Other public sector hospitals and social care facilities are classified into the government sector based solely on the nature of their activities without the market/non-market test. The previous analyses carried out for those units have proven that they are created directly to carry out public policies and are therefore considered to be government sector units, even in some rare cases where receipts from the private sector are slightly bigger than receipts from the government sector. In addition, on the basis of the analysis of the Estonian Health Insurance Fund financing and due to distortions in the competition between hospitals, it was agreed that public hospitals are not to sell their services at economically significant prices

Data sources

The output, intermediate consumption and value added of the non-financial corporations sector are calculated based on data from the annual Structural Business Statistics survey. The SBS data collection and processing methodology is described in Chapter 10.

In the general government sector, the PSFS system is the main data source used for output.

In the households sector, tax declarations on the business income of sole proprietors received from the Tax and Customs Board are the main source. According to this administrative source, the number of registered sole proprietors in human health and social work activities (NACE Q) was about 344 or 1.7% of the total number of sole proprietors in 2021.

Non-profit associations providing social services to a community or target population are classified into the NPISH sector. Human health and social work activities contributed approximately 11.8% of the value added of the NPISH sector. Data on value added and intermediate consumption are modelled based on the annual reports received from the Business Register and the structures of the latest annual surveys of non-profit institutions.

Output

The annual SBS survey Module D “Breakdown of turnover” for human health and social work activities provides the breakdown of turnover by activity at the level of 2-digit codes of NACE Rev. 2. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4. The estimation methodology for unincorporated enterprises is described in Section 3.19.

The methodology for estimating non-market output is the same as for NACE Rev. 2 Section O (see Section 3.21). As non-profit institutions serving households are non-market producers, their output calculations are made on the basis of costs (see Section 3.25).

Intermediate consumption

The compilation method for the intermediate consumption of non-financial corporations is described in Section 3.9. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4

The methodology for estimating the intermediate consumption of the health industry belonging to the general government sector is the same as for NACE Rev. 2 Section O (see Section 3.21).

Adjustments made to basic data

A number of adjustments to output and intermediate consumption are made for differences in concepts, exhaustiveness and when balancing the supply and use tables. The total amount of

adjustments made to the value added of health and social work activities in 2021 was 54.7 million euros or 4.2% compared to initial estimates (see Table 3.99).

Table 3.99 NACE Section Q by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	2,060.5	747.6	1,312.8
..Surveys and censuses	22.6	22.6	0.0
..Administrative records	1,214.4	427.6	786.7
..Combined data	749.1	297.4	451.7
..Extrapolations and models	74.4	0.0	74.4
..Other	0.0	0.0	0.0
Adjustments	62.8	8.1	54.7
..Data validation	52.6	14.8	37.9
..Conceptual	-4.0	-6.7	2.7
..Exhaustiveness	14.2	0.4	13.7
..Balancing	0.0	-0.4	0.4
Final estimate	2,123.3	755.8	1,367.5

3.24. Arts, entertainment and recreation (NACE Rev. 2 Section R)

Introduction

The output, intermediate consumption and value added for NACE Rev. 2 Section R in 2021 are presented in Table 3.100. Value added was estimated at 459.2 million euros or 1.5% of the GNI.

Table 3.100 Contribution of NACE Section R to GDP and GNI by NACE Division, 2021

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Creative, arts and entertainment activities; libraries, archives, museums and other cultural activities; gambling and betting activities (90_92)					
output	484.4				
intermediate consumption	206.4				
value added	278.0	60.5	1.0	0.9	0.9
Sports activities and amusement and recreation activities (93)					
output	443.8				
intermediate consumption	262.6				
value added	181.2	39.5	0.7	0.6	0.6
Total					
output	928.2				
intermediate consumption	469.0				
value added	459.2	100.0	1.7	1.5	1.5

In the SUT framework, NACE Rev. 2 Section R is divided into four market activities of the non-financial corporations and households sectors, and four other non-market activities belonging to the general government and NPISH sectors.

Activity code	Activity	Sector	Type of producer	Source
M.R.90_92	Creative, arts and entertainment activities; other cultural activities; gambling and betting activities	S.11	Market	SBS Module C “Expenses, revenues and profit”, Module D “Breakdown of turnover”, energy and fuel survey, foreign trade statistics, BOP
M.R.93	Sports activities and amusement and recreation activities	S.11	Market	As for S.11
N.R.90_91	Creative, arts and entertainment activities; libraries, archives, museums and other cultural activities	S.13	Non-market	PSFS system
N.R.93	Sports activities and amusement and recreation activities	S.13	Non-market	PSFS system
H.R.90_92	Creative, arts and entertainment activities; other cultural activities	S.14	Market	Tax declarations on business income of sole proprietors (Tax and Customs Board)
H.R.93	Sports activities and amusement and recreation activities	S.14	Market	As for S.14
S.R.90_91	Creative, arts and entertainment activities; other cultural activities	S.15	Non-market	Modelled data based on annual reports from the Business Register, annual surveys of non-profit institutions
S.R.93	Sports activities and amusement and recreation activities; cultural and civic centres	S.15	Non-market	As for S.15

The value added of NACE Rev. 2 Section R was generated by the non-financial corporations (38.8%), general government (46.1%), households (0.9%) and NPISH (14.2%) sectors (see Table 3.101).

Table 3.101 Breakdown of NACE Section R by NACE Division and by institutional sector, 2021
(million euros)

NACE Division	Total	Institutional sector							
		S.11	% of S.11 in division	S.13	% of S.13 in division	S.14	% of S.14 in division	S.15	% of S.15 in division
Creative, arts and entertainment activities; other cultural activities; gambling and betting activities (90_92)									
output	484.4	267.4		189.0		4.8		23.2	
intermediate consumption	206.4	137.4		51.8		2.0		15.2	
value added	278.0	130.1	46.8	137.2	49.3	2.8	1.0	8.0	2.9
Sports activities and amusement and recreation activities (93)									
output	443.8	137.8		133.5		2.6		170.0	
intermediate consumption	262.6	89.6		59.1		1.2		112.7	
value added	181.2	48.1	26.6	74.4	41.0	1.4	0.8	57.3	31.6
Total									
output	928.2	405.2		322.5		7.4		193.2	
intermediate consumption	469.0	227.0		110.9		3.2		127.9	
value added	459.2	178.2	38.8	211.6	46.1	4.2	0.9	65.2	14.2

Data sources

The output, intermediate consumption and value added of the non-financial corporations sector are calculated based on data from the annual Structural Business Statistics survey. The SBS data collection and processing methodology is described in Chapter 10.

In the general government sector, the PSFS system is the main data source used for output.

For unincorporated enterprises, tax declarations on the business income of sole proprietors received from the Tax and Customs Board are the main source of data. According to this administrative source, the number of registered sole proprietors in arts, entertainment and recreation (NACE R) was 1,420 or 7.2% of the total number of sole proprietors in 2021.

For NPISH, data on value added and intermediate consumption are modelled based on the annual reports received from the Business Register and the structures of the latest annual surveys of non-profit institutions. The approximate number of NPISH was 1,400 in creative, arts and entertainment activities (R.90_91) and 4,500 in sports and recreation (R.93) in 2021.

Output

The annual SBS survey Module D “Breakdown of turnover” for arts, entertainment and recreation provides the breakdown of turnover by activity at the level of 2-digit codes of NACE Rev. 2. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

The methodology for estimating non-market output is the same as for NACE Rev. 2 Section O (see Section 3.21). As non-profit institutions serving households are non-market producers, their output calculations are made on the basis of costs (see Section 3.25). The estimation methodology for unincorporated enterprises is described in Section 3.19.

Artistic originals include the works of composers, musicians, performers, choreographers, and other works of art. The value of artistic originals is measured by using royalty flows and the formula recommended in the Report of the Task Force on Entertainment, Literary and Artistic Originals. The estimates for literary originals are based on royalty payments by publishing enterprises and public lending right compensation paid by Autorihüvitusfond (Estonian Copyright Compensation Fund). For more information, see Section 5.10.3.18.

Intermediate consumption

The compilation method for the intermediate consumption of non-financial corporations is described in Section 3.9. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

The methodology for estimating the intermediate consumption of the health industry in the general government sector is the same as for NACE Rev. 2 Section O (see Section 3.21). The compilation method for the intermediate consumption of NPISH is described in Section 3.25.

Adjustments made to basic data

A number of adjustments to output and intermediate consumption are made for differences in concepts, exhaustiveness and when balancing the supply and use tables. The total amount of adjustments made to the value added of arts, entertainment and recreation in 2021 was -72.9 million euros or -13.7% compared to initial estimates (see Table 3.102).

Table 3.102 NACE Section R by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	989.6	457.5	532.1
..Surveys and censuses	130.4	130.4	0.0
..Administrative records	327.6	113.5	214.1
..Combined data	469.7	213.7	256.0
..Extrapolations and models	62.0	0.0	62.0
..Other	0.0	0.0	0.0
Adjustments	-61.4	11.5	-72.9
..Data validation	9.9	14.9	-5.0
..Conceptual	-68.5	-4.8	-63.7
..Exhaustiveness	17.3	1.3	16.0
..Balancing	-20.2	0.0	-20.2
Final estimate	928.2	469.0	459.2

3.25. Other service activities (NACE Rev. 2 Section S)

The output, intermediate consumption and value added for NACE Rev. 2 Section S in 2021 are presented in Table 3.103. The value added of other service activities accounted for 243.6 million euros with a 0.8% share in the GNI.

Table 3.103 Contribution of NACE Section S to GDP and GNI by NACE Division, 2021

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Activities of membership organisations (94)					
output	272.6				
intermediate consumption	162.9				
value added	109.7	45.1	0.4	0.3	0.4
Repair of computers and personal and household goods (95)					
output	37.4				
intermediate consumption	23.0				
value added	14.4	5.9	0.1	0.0	0.0
Other personal service activities (96)					
output	258.1				
intermediate consumption	138.7				
value added	119.4	49.0	0.4	0.4	0.4
..of which prostitution (E.S.96)					
output	3.4				
intermediate consumption	1.0				
value added	2.5	1.0	0.0	0.0	0.0
Total					
output	568.1				
intermediate consumption	324.5				
value added	243.6	100.0	0.9	0.8	0.8

In the SUT framework, NACE Rev. 2 Section S is divided into six market activities of the non-financial corporations and households sectors, two other non-market activities belonging to the general government and NPISH sectors, and one illegal activity.

Activity code	Activity	Sector	Type of producer	Source
M.S.94	Activities of business and employers membership organisations	S.11	Market	Non-profit institutions survey, declarations on payments of income and social tax (Tax and Customs Board)
M.S.95	Repair of computers and personal and household goods	S.11	Market	As for S.11
M.S.96	Other personal service activities	S.11	Market	As for S.11
N.S.96	Other personal service activities	S.13	Non-market	PSFS system
H.S.94	Activities of agricultural associations and unions	S.14	Market	Tax declarations on business income of sole proprietors
H.S.95	Repair of computers and personal and household goods	S.14	Market	As for S.14
H.S.96	Other personal service activities	S.14	Market	As for S.14
S.S.94	Activities of membership organisations	S.15	Non-market	Modelled data based on annual reports from the Business Register, non-profit institutions survey, declarations on payments of income and social tax (Tax and Customs Board)
E.S.96	Prostitution	S.11	Illegal	NA estimates

Membership organisations are divided into two categories, i.e. organisations providing services furnished by business, employers and agricultural associations, treated as market output, and the remaining membership organisations providing services treated as non-market output of the NPISH sector. The approximate number of organisations was 245 in the non-financial corporations sector, 160 in the households sector and 10,000 in the NPISH sector. The non-market output of NPISH (activity S.94) consists of services furnished by professional organisations, trade unions, religious institutions, political organisations, and services furnished by other membership organisations. In the Business Register for Statistical Purposes, there are non-profit organisations classified into NACE sections other than Sections S, L, P, Q, or R. As their share is marginal, they are added to the activity S.94.

The value added of NACE Rev. 2 Section S was created mainly by the NPISH (38.4%) and non-financial corporations (50.6%) sectors. The contribution of the households and general government sectors was smaller (9.9% and 1.1%, respectively); see Table 3.104.

Table 3.104 Breakdown of NACE Section S by NACE Division and by institutional sector, 2021
(million euros)

NACE Division	Total	Institutional sector							
		S.11	% of S.11 in division	S.13	% of S.13 in division	S.14	% of S.14 in division	S.15	% of S.15 in division
Activities of membership organisations (94)									
output	272.6	34.0		0.0		6.7		231.8	
intermediate consumption	162.9	20.7		0.0		3.9		138.2	
value added	109.7	13.3	12.1	0.0	0.0	2.8	2.6	93.6	85.3
Repair of computers, personal and household goods (95)									
output	37.4	30.4		0.0		7.0		0.0	
intermediate consumption	23.0	19.1		0.0		3.9		0.0	
value added	14.4	11.3	78.3	0.0	0.0	3.1	21.7	0.0	0.0
Other personal service activities (96)									
output	258.1	217.7		3.9		36.5		0.0	
intermediate consumption	138.7	119.2		1.2		18.3		0.0	
value added	119.4	98.5	82.5	2.7	2.2	18.2	15.2	0.0	0.0
..of which prostitution (96)									
output	3.4	3.4		0.0		0.0		0.0	
intermediate consumption	1.0	1.0		0.0		0.0		0.0	
value added	2.5	2.5	100.0	0.0	0.0	0.0	0.0	0.0	0.0
Total									
output	568.1	282.1		3.9		50.2		231.8	
intermediate consumption	324.5	159.0		1.2		26.1		138.2	
value added	243.6	123.2	50.6	2.7	1.1	24.1	9.9	93.6	38.4

Data sources

The output, intermediate consumption and value added of the non-financial corporations sector are calculated based on data from the annual Structural Business Statistics survey. The SBS data collection and processing methodology is described in Section 3.9.

In the general government sector, the PSFS system is the main data source used for output.

For unincorporated enterprises, tax declarations on the business income of sole proprietors received from the Tax and Customs Board are the main source of data. According to this administrative data source, the number of registered sole proprietors in other service activities (NACE Rev. 2 Section S) was about 3,080 or 15.6% of the total number of sole proprietors in 2021.

For the NPISH sector, data on value added and intermediate consumption are modelled based on annual reports from the Business Register using the structures of the latest available annual surveys of non-profit institutions. The data collection and estimation methodology is described in this section below.

For illegal activities such as prostitution, the main data for calculations are received from the Police and Border Guard Board, but Statistics Estonia's data on accommodated tourists by country of residence and information from the media are also used.

Output

The annual SBS survey Module D "Breakdown of turnover" for other service activities provides the breakdown of turnover by activity at the level of 2-digit codes of NACE Rev. 2. For NACE Division 96, data are available only at the 3-digit level. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

The methodology for estimating non-market output is the same as for NACE Rev. 2 Section O (see Section 3.21).

Intermediate consumption

The compilation method for the intermediate consumption of non-financial corporations is described in Section 3.9. The transition from private accounting to the national accounts concepts of ESA 2010 is described in Section 3.4.

The methodology for estimating the intermediate consumption of other service activities in the general government sector is the same as for NACE Rev. 2 Section O (see Section 3.21).

Adjustments made to basic data

A number of adjustments to output and intermediate consumption are made for differences in concepts, exhaustiveness and when balancing the supply and use tables. The total amount of adjustments made to the value added of other service activities in 2021 was 35.6 million euros or 17.1% compared to initial estimates (see Table 3.105).

Table 3.105 NACE Section S by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Source	511.2	303.2	208.0
..Surveys and censuses	146.9	144.1	2.8
..Administrative records	110.1	18.5	91.6
..Combined data	236.2	140.7	95.5
..Extrapolations and models	18.0	0.0	18.0
..Other	0.0	0.0	0.0
Adjustments	56.9	21.3	35.6
..Data validation	36.4	17.1	19.3
..Conceptual	-4.1	-2.9	-1.2
..Exhaustiveness	24.6	7.1	17.5
..Balancing	0.0	0.0	0.0
Final estimate	568.1	324.5	243.6

NPISH

Starting from 2021, the yearly sending of questionnaires to non-profit institutions was terminated and the survey is conducted every four or five years. At the same time, the modelling of indicators based on annual reports of NPIs received from the Business Register was introduced. As some indicators which were previously collected with the statistical questionnaire are missing in annual reports, the structures of income and expenditures calculated according to the questionnaire data are used for modelling. Every four or five years, the data for estimating value added and intermediate consumption are collected with the annual survey of non-profit institutions. This is a sample survey; however, units with 10 and more employees and political parties are covered entirely. As non-profit organisations engage in very different activities, the data in the sample are organised by 39 strata (units with 10 and more employees form separate strata by activity):

Code of NACE Rev. 2	Activity
<37, 41–63, 95, 97–99	Organisations classified to NACE divisions other than S 94, S 96, E, L, P, Q or R
37–39	Sewerage; waste collection, treatment and disposal activities; materials recovery; remediation activities and other waste management services
68	Activities in the field of real estate
68321*	Own house associations management, including maintenance and repair
68321*	Own garage associations management
68322	Own holiday house associations management n.e.c.
69–84	Renting of machinery, computers and related activities, research and development, other business activities
85 except 854, 8553, 85591, 85592	Education (non-market producers)
854, 8553, 85591, 85592	Education (market producers)
87–88	Health and social care
90–92	Creative, arts and entertainment activities; other cultural activities
93	Sports activities and amusement and recreation activities; cultural and civic centres
94	Activities of membership organisations

Code of NACE Rev. 2	Activity
94111	Activities of agricultural associations and unions
94119	Activities of business and employers' organisations and unions
9412	Activities of professional organisations
942	Activities of trade unions
9491	Activities of religious institutions and organisations
9492	Activities of political organisations
96	Other personal service activities

* Separate populations for the management of own house associations and for the management of own garage associations (both activity 68321) are formed based on a specially compiled list, as housing associations are created on the basis of a special law and there is a special marker for such units in the Statistical Profile database.

The data collected with survey questionnaires are grossed up by number of units in the stratum. For that purpose, the Tax and Customs Board's data on payments subject to social tax are used. SE receives the data from the Tax and Customs Board by NACE group at the 5-digit level. The Tax and Customs Board data are grouped in accordance with the strata in the sample, and multipliers are calculated for each stratum. Then, the sample data are grossed up and calculations are made for all strata.

Method of calculation for NPISH

As non-profit institutions serving households are non-market producers, their output calculations are made on the basis of costs. The output of non-profit institutions serving households is calculated as the sum of value added and intermediate consumption. The activities of employers' organisations and agricultural associations are reclassified into institutional sectors S.11 (activity S.94) and S.14 (S.94).

Value added is the sum of expenditure on wages and salaries, employers' social contribution paid on behalf of employees, unemployment insurance premium, taxes on production, and the consumption of fixed capital. The Tax and Customs Board's data are used for calculating wages and salaries, social contributions and land tax. Intermediate consumption consists of economic expenditures. A part of expenditures – for example, daily allowances – are treated as wages and salaries and subtracted from intermediate consumption. To arrive at the service charge concept of insurance services, adjustments are made for total expenditures on insurance using the data of the financial corporations sector on the sum of insurance service charges.

The figures of wages and salaries are reduced by subtracting the sum of wages and salaries which employers temporarily continue to pay in the event of the redundancy of their employees. The figures of the employers' social contributions are increased by imputed social contributions D.1222. It is the sum of the wages and salaries which employers temporarily continue to pay in the event of the sickness, occupational injury or redundancy of their employees.

Based on the Tax and Customs Board's data, wages and salaries in kind are added to the compensation of employees. The data on wages and salaries and social contributions are adjusted with data on social contributions paid on fringe benefits.

The consumption of fixed capital is recalculated based on accounting figures according to ESA 2010 methods (see Section 4.12.5).

For NPIs, the output of market producers is estimated on the basis of income. Economic expenditures are treated as intermediate consumption. Value added is derived as the difference between output and intermediate consumption.

Recommendations from the GNP Committee Task Force on Distribution (CPNB 205) related to exhaustiveness

The best source for estimating the repairs of household goods is the HBS, i.e. the estimation is based on expenditure. Also, data from the SBS are available. The estimates from the HBS are regularly compared and checked against the data from the SBS and, if necessary, adjustments are made.

Illegal activities

Estimates made for prostitution are described in Chapter 7.

3.26. Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (NACE Rev. 2 section T)

Introduction

The output, intermediate consumption and value added for NACE Rev. 2 Section T in 2021 are presented in Tabel 3.106. Value added was estimated at 16.2 million euros or 0.1% of the GNI.

Table 3.106 Contribution of NACE Section T to GDP and GNI, 2021

NACE Division	Total, million euros	% of GVA of section	% of GVA	% of GDP	% of GNI
Activities of households as employers of domestic personnel and undifferentiated goods and services production of households for own use (97_98)					
output	16.2				
intermediate consumption	0.0				
value added	16.2	100.0	0.1	0.1	0.1

In NACE Rev. 2 section T, one activity belonging to the households sector is specified.

Activity code	Activity	Sector	Type of producer	Source
H.T.97_98	Activities of households as employers of domestic personnel; undifferentiated goods- and services-producing activities of private households for own use	S.14	For own final use	Household Budget Survey

In the case of production associated with paid domestic services, total output value is calculated from the use side on the basis of the Household Budget Survey where expenditure figures for persons employed by private households are taken as a measure of output. It is assumed that the HBS provides reliable information for COICOP groups 05.6.2 Domestic services and household services (services supplied by paid staff employed in private service, such as butlers, cooks, maids, drivers, gardeners, nannies), and 12.4 Social protection (such services include

residential care, home help, day care and rehabilitation for persons who are elderly, disabled, unemployed, homeless, destitute, etc. It also covers assistance and support services provided to families and children); no adjustment for under-coverage is made.

The HBS was not conducted in 2021; HBS data derived using regression models were used instead. For more information about forecasting, see Chapter 10.

Table 3.107 NACE Section T by source and by type of adjustments, 2021
(million euros)

	Output	Intermediate consumption	Gross value added
Sources	0.0	0.0	0.0
..Surveys and censuses	0.0	0.0	0.0
..Administrative records	0.0	0.0	0.0
..Combined data	0.0	0.0	0.0
..Extrapolations and models	0.0	0.0	0.0
..Other	0.0	0.0	0.0
Adjustments	16.2	0.0	16.2
..Data validation	0.0	0.0	0.0
..Conceptual	0.0	0.0	0.0
..Exhaustiveness	16.2	0.0	16.2
..Balancing	0.0	0.0	0.0
Final estimate	16.2	0.0	16.2

Income in kind, in particular food and accommodation, is not calculated and included in the estimates of remuneration paid to employed staff because of the lack of reliable information. No adjustment for under-coverage is made.

3.27. Activities of extraterritorial organisations and bodies (NACE Rev. 2 section U)

Activities of extraterritorial organisations and bodies are irrelevant, because they are not part of the Estonian economy according to ESA 2010, paragraph 2.06.

Compensation of employees earned by residents from extraterritorial organisations and bodies is recorded in the GNI (see Chapter 8).

3.28. Taxes on products, including VAT

The Estonian tax system consists of state taxes (direct and indirect taxes) prescribed and imposed by tax acts, and of local taxes imposed by a rural municipality or city council in its administrative territory (see Table 3.108). In national accounts, taxes on products, including VAT, are divided into four main categories.

Table 3.108 Taxes on products by category, 2021

Code	Category	Time-adjusted cash, million euros	% of total D.21
D.21	Taxes on products, total	4,061.3	100.0
D.211	Value added tax	2,877.1	70.8
D.212	Taxes and duties on imports, excluding VAT	1,048.6	25.8
D.2121	Import duties	62.3	1.5
D.2121	Customs duties	62.3	1.5
D.2122	Taxes on imports, excluding VAT and import duties	986.3	24.3
D.2122C	Alcohol excise	223.3	5.5
D.2122C	Tobacco excise	242.4	6.0
D.2122C	Fuel excise	506.8	12.5
D.2122C	Packaging excise	0.4	0.0
D.2122C	Motor vehicle excise	0.0	0.0
D.2122C	Electricity excise	8.5	0.2
D.2122C	Liquid fuel stockpiling fee	4.9	0.1
D.214	Taxes on domestic products	135.6	3.3
D.214A	Renewable energy charge	94.9	2.3
D.214D	Car registration fee	7.6	0.2
D.214F	Gambling tax	33.0	0.8
D.214H	Postal service payment	0.1	0.0

Under **D.211**, only VAT is classified. The value added tax is charged on the supplies of goods and services in the course of business activities and the self-supply of goods and services. The taxable period is one calendar month and value added tax returns are to be submitted to the tax authority by the 20th day of the month following the taxable period. In national accounts, a timing adjustment is made to the value added tax: tax revenues for January are allocated to the previous calendar year, as the payments are due one month after the tax was declared. The proportion of tax reimbursements to total VAT revenue is monitored, so that delays in tax reimbursements would not affect revenue levels between succeeding years. See “Taxes on products: time of recording” for more details. The standard rate of VAT is 20%; the reduced rate applied in some cases is either 9% or 0%. Statistics Estonia gets the relevant information from the detailed report of the Tax and Customs Board.

Customs duties are classified under **D.2121**. The data are collected on behalf of the EU as is the procedure for customs duties within the Union. Customs duties relate to the value of imported goods, released for free circulation. Estimates are based on information from the customs declarations of the Tax and Customs Board. The declared values are available for imported goods at a detailed product level in accordance with the Combined Nomenclature. The value of customs duties is calculated by applying the duty rate (a certain percentage) to the value of the imported goods. In some cases, there is more than one duty rate applicable to a product group. For national accounts purposes, the cash-based figure is used, unadjusted.

The most important taxes on imports (**D.2122**) are excise on alcohol, fuel, tobacco and electricity, but motor vehicles and packages are also taxed. Liquid fuel stockpiling levies are also classified as D.2122. The cash-based data on alcohol and fuel excise are compared with

information on declarations to make sure the volumes correspond to each other. This comparison allows confirming whether the monthly adjustment that has been made is correct. For all excises, cash-based data from the Tax and Customs Board are used.

Excise duty on alcohol is imposed on wine, beer, fermented beverages, intermediate products and other alcohol produced in Estonia or brought into Estonia. Alcoholic beverages with ethanol content above 22% by volume and bottled in a selling package with a volume of 0.05 litres or more must be revenue stamped. Alcohol must be produced in an excise warehouse. An excise warehouse is a place where excise goods can be produced, stored, received or dispatched under an excise suspension arrangement. Excise duty is payable mainly upon importation or release for consumption from an excise warehouse or upon the receipt of alcohol from another Member State by a registered trader. Excise duty is collected by the Tax and Customs Board. As there is no information to determine the origin of alcohol – whether it has been imported into Estonia or produced in Estonia – excise duties on imported and domestic alcohol are treated together.

Excise duty on tobacco is imposed on smoking tobacco, cigarettes, cigars, cigarillos and chewing tobacco. Tobacco products must be revenue stamped. Tobacco products must be produced only in an excise warehouse. An excise warehouse is a place where excise goods can be produced, stored, received or dispatched under an excise suspension arrangement. Excise duty is payable mainly upon importation or release for consumption from an excise warehouse or upon the receipt of tobacco products from another Member State by a registered trader. Excise duty is collected by the Tax and Customs Board.

Excise duty on fuel is imposed on motor and heating fuels. The taxation of energy goods in Estonia is based on EU Directive 2003/96/EC which sets the minimum excise rates for a number of energy products.

Excise on packaging is imposed on packaging launched to the Estonian market, acquired from another Member State or imported into Estonia from non-Member States. Excise is paid by the importer of packages, by the user of packages, or by the person who acquired packaging from another Member State upon the sale, exchange, free transfer or use for self-consumption of packaging. Excise accrues into the state budget. Excise duty on packaging is not charged in certain cases where the conditions of recovering the packages are met.

Liquid fuel stockpiling fees to be paid are based on rules very similar to those applying to fuel excise, hence the classification under the same heading. These payments are made by enterprises who release liquid fuels into consumption, and the payments are based on the volumes they release. The relevant revenue is used to cover the managing costs of the Estonian Oil Stockpiling Agency (OSPA) and it does not include the cost of acquiring the fuels managed by the OSPA. The rate that is used for the calculation of the tax is set by the Ministry of Economic Affairs and Communications and, in normal circumstances, the rate is updated once a year.

The Tax and Customs Board is responsible for collecting excise duties and also provides Statistics Estonia with cash-based data and declarations data. The time-adjusted cash method is used for national accounts purposes.

Four taxes are classified under taxes on domestic products (**D.214**), but their proportion to the total tax revenue is almost trivial. These are the renewable energy charge, car registration fee, gambling tax and postal service payment tax.

The renewable energy charge is a fee through which the electricity consumers finance the renewable sources or efficient cogeneration in Estonia. The fee is regulated by the Electricity Market Act. According to the Electricity Market Act, Elering AS is responsible for calculating the renewable energy charge. Elering AS publishes its assessments for the renewable energy charge on its website by 1 December of each year. The renewable energy charge is separated from the network fees, therefore paid by all end consumers in Estonia in proportion to the volume of network services they consume. Following the Excessive Deficit Procedure dialogue visit to Estonia in January 2023, the charge was classified as a tax-subsidy scheme and has been retrospectively included in the data starting from 2007.

Car registration tax and gambling tax are recorded in the government accounts on a cash basis. As the difference in time between the declaration of these taxes and the actual payments made was recognised as insignificant, no time-adjustments are made, and the cash amounts are treated as accruals.

Car registration tax is part of the state duty accrued to the state budget, treated in national accounts as taxes on products. The car registration tax is imposed on vehicles registered for the first time during the accounting period. Statistics Estonia was granted a reservation for car registration fees. As a result, registration fees on lorries were included in the data on car registration fees in 2014. This change was made for the entire time series.

Gambling tax is imposed on amounts received from lottery, promotional lottery, toto (totalisator plus betting), remote gambling and tournaments of game of chance. The tax is also charged on gambling tables and machines used for a game of chance or a game of skills and located on licensed premises.

Postal service payment is a payment made by a postal service provider with a financing obligation in order to compensate for the costs specified in the Postal Act.

The detailed cash-based monthly report on tax revenue by the Tax and Customs Board is the main data source for taxes on products. Exceptions include renewable energy charge, stockpiling levies, car registration fees and postal service payments which are not considered as taxes by Estonian legislation, and the relevant data on these are collected from other sources.

Classification rules applied to taxes on products, particularly in borderline cases between taxes and fees for services

The Estonian legislation is examined to understand the specifics of the tax and it is then compared to the ESA 2010 methodology. The most important aspects to which attention is paid include the object of taxation, the grounds on which the tax is calculated, who collects it, and when the liability arises. Most cases are straightforward, but sometimes the experience of other Member States is relied on or Eurostat officials are consulted. In some cases, national accounts concepts differ from the concepts used in business accounting, administrative sources or other basic statistics. Therefore, attention has been paid to borderline cases between taxes and fees for services to be in line with ESA 2010 requirements.

A borderline case is the car registration fee which is not listed as a tax in Estonian legislation but is treated as a tax for national accounts purposes and is classified as D.214. Stamp taxes or state fees on legal documents paid by households are treated as government services.

Since the September 2015 revision, the fees paid to the Estonian Oil Stockpiling Agency (OSPA) are treated as taxes on products as required by the methodology presented in the Manual on Government Deficit and Debt (MGDD). Following the instructions presented in the MGDD and consultation provided by Eurostat, stockpiling levies were classified as taxes on products.

Taxes on products: time of recording

To comply with the accrual time of recording, ESA 2010 offers three possible methods. Two of them are applicable if declarations and assessments are used and one is applicable in the case of cash receipts. Since cash receipts are used in Estonia, the third method is used. According to the provided methodology, such data must be time-adjusted so that the cash is attributed when the activity took place to generate the tax liability. This adjustment is based on the average time difference between the activity and cash tax receipt.

Statistics Estonia applies this methodology if three criteria are satisfied:

- The tax has to be of significant proportion in relation to the total tax revenue; the threshold in most cases is 1%.
- There needs to be a lag between the time when the tax liability is created and the time when the tax is paid.
- The tax receipts need to be volatile in time.

Out of taxes on products, time adjustment is applied to value added tax and excise duties which are the only ones to satisfy these conditions (see Table 3.108 for the relevant proportions). This adjustment is based on the average time difference between the activity and cash tax receipt. In the case of the said taxes, it is one month.

Sources used for the calculation of taxes on products

If cash receipts are used, see the section “Taxes on products: time of recording” for more detailed information on this subject. If cash receipts are time-adjusted, it is based on the difference between the activity and cash tax receipt.

Adjustments made to take account of tax (including VAT) amounts unlikely to be collected (Regulation (EC) No 2516/2000):

In accordance with Regulation (EC) No 2516/2000, Estonia does not adjust taxes on products (including VAT) by applying coefficients to reflect amounts unlikely to be collected, nor does it use the alternative approach of recording capital transfers to the relevant sectors. Accordingly, Estonia does not produce specific estimates of such adjustments for taxes on products. Estonia applies the simple time-adjusted cash method for taxes on products. The amounts reported in the national accounts are already recorded on an accrual basis; no further adjustments are required.

In Estonia, individual VAT data are received from the Tax and Customs Board. The total amount of tax collected by other countries on behalf of Estonia is recorded in D.211. The differences between taxes collected and actual amounts of VAT that Estonia receives from other countries and transfers to other countries are recorded as D.74 expenditure and revenue,

according to the suggestion of the GNI Committee. As with other similar taxes, VAT on electronic services is also subject to a time adjustment of one month.

3.29. Subsidies on products

Subsidies on products (D.319) consist mainly of price support to the producers of certain agricultural products and to local passenger transportation enterprises. The classification of subsidies is presented in Table 3.109.

Table 3.109 Classification of subsidies

Code	Type of subsidies	Comment
D.31	Subsidies on products	
D.311	Import subsidies	Did not exist in 2021
D.319	Other subsidies on products	
D.39	Other subsidies on production	

In 2021, the total value of subsidies on products was 126.7 million euros (see Table 3.110).

Table 3.110 Subsidies on products by category, 2021
(million euros)

Code	Category	Value
D.31	Subsidies on products	126.8
D.319	Agricultural subsidies	22.6
D.319	Subsidies for passenger road transport by bus, trolley bus or tram	64.9
D.319	Other subsidies on products	38.9
D.319	Subsidies for passenger water transport	0.4

As all subsidies on products are paid in relation to a certain product, another breakdown of the said subsidies can be given (see Table 3.111). This allows for a more detailed view of agricultural subsidies. This breakdown is compiled based on agricultural business surveys and reports of the institutions allocating these subsidies. This breakdown goes into detail beyond the capabilities of PSFS.

Table 3.111 Subsidies on products by CPA product, 2021
(million euros)

Product group	Value
Oil seeds, hop and other raw vegetable materials	5.3
Live animals and poultry	17.2
Passenger transportation by road (bus, trolley bus and tram traffic)	64.9
Passenger water transport services	0.4
Electricity	33.5
Manufactured gas	5.4
Total	126.8

Classification rules applied to subsidies on products, particularly in borderline cases between subsidies and social transfers

The classification is based on the data available from PSFS and is thus heavily reliant on the assumption that the units reporting are following the guidelines set out in the General Rules for State Accounting. Usually, the information necessary for classification is available in PSFS but sometimes annual reports and enterprise surveys are consulted. The main fields in PSFS used for classification include the account code, institutional sectors of the units making and receiving the transfers, and economic activity. Analysing the results received by applying rules set by these parameters allows Statistics Estonia to make exceptions where necessary.

The main data sources include:

- accrual-based PSFS;
- annual reports of the Estonian Agricultural Registers and Information Board;
- data from units responsible for implementing different programmes (e.g. Estonian Film Foundation).

Additional information is used to divide expenditures between different transactions and to check PSFS data.

In Estonia, the following subsidies on products (D.31) are provided:

- 1) transportation subsidies for passenger transport;
- 2) subsidies on agriculture;
- 3) other subsidies on products.

Transport subsidies are paid both by the central government and local governments. Information on transport subsidies is gathered from the PSFS. In general, the subsidies are divided between four types of transportation: road transport (bus, trolley bus and tram traffic), railway transport, water transport and air transport. There are no subsidies for passenger transport on railway recorded, as from 1 January 2014 passenger transport by rail is provided by a government sector unit after the loss of competition between passenger transport operators.

Furthermore, there are no subsidies recorded for passenger transport by air in 2021.

Agricultural subsidies are granted on the basis of multiple criteria. Subsidies on products consist of subsidies granted based on the number of livestock or units of area. Starting from 2007, the main principles of providing support to dairy farming were changed and therefore the corresponding subsidies were transferred to subsidies on production (D.39).

From 2021, the renewable energy charge is accounted for on the expenditure side as D.319. For more details, see 3.28.

There is one borderline case where, based on the information from the PSFS, the subsidy paid for the transportation of students is recorded as a social transfer.

In 2021, Estonia was using the Car Scrap Scheme. In the case of an unconditional bonus, the car is scrapped with no obligation to buy a new car. The household has the perception of an

increase in its disposable income. The link between the payment of the bonuses and car sales is weak. The effect on car prices and car production is not straightforward. If the bonus is paid, it is treated as a capital transfer (D.92).

Time of recording

The source of data on subsidies is the PSFS, which is based on accrual data.

Chapter 4. Income approach

4.0. GDP according to the income approach

The GDP by income approach is not an independent approach. Some components, such as operating surplus and mixed income, are derived residually when balancing supply and use tables. To a large extent, the income approach uses the same sources as the production approach. The two approaches coincide with respect to using survey data and administrative sources. GDP by income approach is presented in Table 4.1.

Table 4.1 GDP by income approach, 2021

Component	Value	% of GDP
Compensation of employees	15,072.70	47.9
..Wages and salaries	11,336.5	36.0
..Social contributions	3,736.2	11.9
Gross operating surplus	12,131.8	38.6
..Consumption of fixed capital on operating surplus	4,898.8	15.6
..Operating surplus	7,233.0	23.0
Gross mixed income	643.1	2.0
..Mixed income	492.2	1.6
..Consumption of fixed capital on mixed income	150.8	0.5
Taxes on production and imports	155.8	0.5
Other subsidies on production (-)	484.5	1.5
Taxes on products	4,061.3	12.9
Subsidies on products (-)	126.8	0.4
GDP at market prices	31,453.31	100.0

Table 4.2 describes the breakdown of the compensation of employees, taxes on products, other taxes on production and imports, subsidies on products, other subsidies on production, gross operating surplus and mixed income in 2021 by NACE sections.

Table 4.2 GDP by income approach by economic activity, 2021
(million euros)

NACE Section	Gross value added	Wages and salaries	Social contributions	Consumption of fixed capital	Operating surplus	Mixed income	Other taxes on production	Other subsidies on production
Agriculture, forestry and fishing (A)	611.3	230.5	73.6	228.6	238.9	77.6	13.6	-251.4
Mining and quarrying (B)	147.4	45.0	15.3	44.9	40.4	-0.2	1.9	0.0
Manufacturing (C)	4,098.7	1,957.5	641.1	622.6	873.6	6.1	13.7	-16.0
Electricity, gas, steam and air conditioning supply (D)	895.1	113.1	38.5	288.7	533.4	-1.2	22.3	-99.7
Water supply; sewerage, waste management and remediation activities (E)	229.7	69.6	23.0	86.7	41.3	-0.2	11.4	-2.1
Construction (F)	1,810.2	908.2	268.5	170.4	357.4	105.1	4.8	-4.2
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	3,455.6	1,482.2	474.0	366.6	1,105.6	34.7	5.4	-12.8
Transportation and storage (H)	1,781.1	720.7	218.1	484.9	360.7	7.2	8.9	-19.5
Accommodation and food service activities (I)	347.7	242.7	73.6	58.0	0.0	-0.6	0.7	-26.7
Information and communication (J)	1,885.7	982.7	310.8	387.2	211.9	0.7	0.6	-8.2
Financial and insurance activities (K)	1,264.8	353.3	125.6	129.0	621.6	6.4	28.9	0.0
Real estate activities (L)	3,178.3	167.2	50.8	886.2	1,876.1	167.4	31.9	-1.4
Professional, scientific and technical activities (M)	1,754.2	693.6	216.0	270.9	533.6	47.2	7.0	-14.0
Administrative and support service activities (N)	952.8	457.1	142.2	160.3	197.8	-2.0	0.8	-3.3
Public administration and defence; compulsory social security (O)	1,697.0	837.9	368.2	488.7	0.0	0.0	2.3	0.0
Education (P)	1,322.8	868.1	296.8	148.3	14.4	2.0	0.2	-6.9
Human health and social work activities (Q)	1,367.5	857.5	285.8	103.5	121.8	5.4	0.3	-6.8
Arts, entertainment and recreation (R)	459.2	219.4	73.6	91.4	80.6	2.9	0.5	-9.2
Other service activities (S)	243.6	130.2	40.8	32.7	24.0	17.6	0.5	-2.3
Activities of households as employers; undifferentiated goods- and services-	16.2	0.0	0.0	0.0	0.0	16.2	0.0	0.0

NACE Section	Gross value added	Wages and salaries	Social contributions	Consumption of fixed capital	Operating surplus	Mixed income	Other taxes on production	Other subsidies on production
producing activities of households for own use (T)								
Total	27,518.9	11,336.5	3,736.2	5,049.6	7,233.0	492.2	155.8	-484.5
Taxes on products	4,061.3							
Subsidies on products	-126.8							
Gross domestic product	31,453.3							

Table 4.3 describes the breakdown of the compensation of employees, taxes on products, other taxes on production and imports, subsidies on products, other subsidies on production, gross operating surplus and mixed income by institutional sector (S.11–S.15).

Table 4.3 Components of value added by institutional sector, 2021
(million euros)

	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	11,336.5	8,230.8	353.3	2,518.8	35.2	198.4
Social contributions	3,736.2	2,597.7	125.6	940.9	8.6	63.3
Consumption of fixed capital	5,049.6	3,212.7	128.7	978.3	703.7	26.2
Operating surplus	7,233.0	5,490.1	621.6		1,121.3	
Mixed income	492.2				492.2	
Other taxes on production	155.8	101.2	28.9	3.5	21.7	0.4
Other subsidies on production	-484.5	-453.1			-31.5	-0.0

4.1. Reference framework

The income approach distinguishes the following components: the compensation of employees, other taxes on production and imports, other subsidies on production, operating surplus, mixed income and consumption of fixed capital.

The compensation of employees is broken down into wages and salaries in cash, wages and salaries in kind and employers' social contributions, both actual and imputed. The compensation of employees is estimated by institutional sector and by economic activity.

Main data sources used for the income approach

For non-financial corporations, the compensation of employees is calculated on the basis of the statistical survey "Annual data of agricultural, forestry and fishing enterprises" and the SBS. Adjustments are made for wages and salaries in kind, for hidden labour and undeclared envelope wages, for tips paid in restaurants and hotels and for wages in non-registered economy using mainly information from the Estonian Tax and Customs Board and the Labour Force Survey (LFS). The SBS is carried out annually on a regular basis and it covers all size classes. The Tax and Customs Board data on the total economy are usually available 30 days after the end of the period. The LFS is carried out by SE on a quarterly basis. For more information about these data sources, see Chapter 10.

For the financial sector (NACE K), the compensation of employees is calculated on the basis of administrative data of the Estonian Tax and Customs Board. For calculating the compensation of employees, adjustments are made for wages and salaries in kind, for hidden labour and undeclared envelope salaries using mainly information from the Tax and Customs Board and the LFS.

For the general government sector, most of the data on the compensation of employees are derived from the PSFS (Public Sector Financial Statements) system (see Section 3.21). The breakdown of labour costs allows estimating the main categories of the compensation of employees as wages and salaries and employers' social contributions. The information from the PSFS is available monthly in approximately t+33 days.

For households, the compensation of employees represents a small part of value added, as it is calculated only for sole proprietors with employees. The declarations on the business income of sole proprietors received from an administrative source (the Tax and Customs Board) are used as the data source for estimating wages and salaries and social tax. Sole proprietors have to report the amount of wages and salaries paid to employees, fringe benefits granted to employees, social tax paid on behalf of employees and social tax paid on business income. The Tax and Customs Board data covering all sole proprietors are usually available 30 days after the end of the period.

Data on the compensation of employees of NPISH are modelled using the structures of previously collected annual surveys of non-profit institutions. Data on wages and salaries, employers' social contributions and taxes are received from the Tax and Customs Board. For the NPISH sector, adjustments are made for the private use of business cars and for daily allowances by allocating part of the payments for business trips to the compensation of employees. No other adjustments have been made for NPISH.

The CFC is calculated using yearly data on investments provided by enterprises through the yearly SBS, the annual survey on the economic indicators of agricultural, forestry and fishing

enterprises, the annual survey of non-profit institutions, and the PSFS system by distinguishing all the required asset types. For more information, see Section 4.12.

For the data on other taxes on products, the most important sources include the reports on the state and local budget execution by the Ministry of Finance, the detailed report on tax accrual from the Tax and Customs Board and the PSFS. These reports reflect the revenue of the government sector and therefore cover taxes from all institutional sectors. The detailed report on tax accrual is published monthly, and the report on local budgets and public sector financial statements are available quarterly. The PSFS report accounting data of the government sector, which are in line with the accrual time of recording.

For subsidies on products, the data sources used include the PSFS and annual reports of the Estonian Agricultural Registers and Information Board.

The calculation of other subsidies on production is based on the PSFS, annual reports of the Estonian Agricultural Registers and Information Board and the data from units responsible for implementing different programmes (e.g. the Estonian Film Foundation). Additional information is used to divide expenditures between different transactions and to crosscheck PSFS data.

For net taxes on other production, administrative data are obtained on a regular and timely basis in order to make good-quality estimates quickly. Information on tax collection is gathered monthly and is usually available $t+3$ days after the end of the month. However, due to the time-adjusted method for accrual reporting, this becomes $t+33$ days. Information about subsidies from the PSFS is available quarterly in approximately $t+35$ days. While the tax collection figures are final after their first publication (barring any mistakes), the PSFS data are usually altered several times, causing different results between revisions.

Thus, the following quality requirements for statistical sources used for the income approach are fully implemented:

- a) Annual data are collected on each component of the income approach through regular enterprise surveys.
- b) For all data sources, all size classes are covered (sample surveys and full surveys take the number of employees into account).
- c) For the components of the income approach, no information is gathered less frequently than once a year.
- d) Administrative data are obtained on a regular and timely basis in order to have good-quality estimates quickly.

As the main data sources are quite comprehensive, there is no need for ad-hoc surveys to complement regular inquiries. However, for the activities of non-financial corporations, data on wages and salaries are compared with information from the Tax and Customs Board.

4.2. Borderline cases

4.2.1. Borderline cases between wages and salaries and intermediate consumption

For non-financial corporations, financial corporations, unincorporated enterprises of the households sector and NPISH, output and wage adjustments are made for the private use of business cars and for goods and services produced by the employer and provided to employees cheaper or free of charge. Wages and salaries in kind are estimated using information from the Tax and Customs Board and Household Budget Survey (HBS) data. Income in kind is often included as intermediate costs by the enterprises that respond to the SBS survey of enterprises, while it should be counted as the compensation of employees according to the national accounts concepts of ESA 2010. Therefore, the expenditures on goods and services provided free to employees are reallocated from intermediate consumption to the compensation of employees. For further information, see Chapter 7.

Wages and salaries in kind for non-financial corporations, financial corporations and NPISH exclude expenditure that benefits the employer, such as business travel expenses and clothing used mainly at work, because these are necessary for the production process. According to the Occupational Health and Safety Act (RT I 21.04.2021, 4), an employer is required to provide, at the employer's expense, an employee with personal protective equipment, special work clothes, and cleaning and washing means if the nature of the work so requires. Work clothes provided by the employer to the employee are primarily intended to be worn and used during working hours. In accordance with subsection 32 (2) of the Income Tax Act (RT I, 26.03.2021, 2), the purchase of work clothes by the employer is considered as a business expense. The use of work clothes during non-working hours is taxed as a fringe benefit. The expenditures on goods and services provided free to employees are reallocated from intermediate consumption to the compensation of employees. Wages and salaries in kind are recorded under accounts related to fringe benefits, and daily allowances are recorded as wages and salaries in cash. Business travel expenses (excluding daily allowances) and clothing used mainly at work are recorded as intermediate consumption.

For the general government sector, the treatment of wages and salaries in kind is covered in the PSFS. No additional adjustments are made. Wages and salaries in kind are mostly recorded under accounts related to fringe benefits. Business travel expenses (excluding daily allowances) and clothing used mainly at work are recorded as intermediate consumption. For the general government sector, daily allowances received by employees are fully recorded as wages and salaries.

In Estonia, the income approach is not an independent method. Gross operating surplus is calculated by activity as a residual item between gross value added from the production approach and the components of the value added of the income approach.

For borderline cases concerning taxes on production and imports and subsidies, see Sections 4.8 and 4.9. For borderline cases concerning intangible fixed assets, see Section 5.2.2.

For borderline cases concerning non-life insurance service charges (payments for life insurance should be excluded), see Section 3.2.2.e.

For borderline cases concerning FISIM purchased by resident producers, see Section 3.2.2.f.

4.3. Valuation

4.3.1. Compliance with the valuation rules of ESA 2010

For non-financial corporations, financial corporations, NPISH and government sectors, the compensation of employees is recorded on an accrual basis, which is consistent with national accounts concepts. More detailed descriptions are provided in Section 4.7.

Other taxes on production, including taxes on land and pollution, water abstraction charge and fishing charge, are recorded on an accrual basis. Business and professional licences, tax on advertising, road and street closure tax and tax on the use of a motor vehicle are recorded in the government accounts on a cash basis. In these cases, accrued values are set equal to actual receipts by convention. More detailed descriptions are provided in Section 4.8.

The valuation of the consumption of fixed capital is described in Section 4.12.

Goods and services given to employees as wages and salaries in kind are valued at basic prices if produced by the employer and at purchaser's prices if purchased by the employer. If provided free of charge, the total value of the wages and salaries in kind is calculated according to the basic prices (or the purchaser's prices of the employer if purchased by the employer) of the goods and services in question. This value is reduced by the amount paid by the employee if the goods and services are given at reduced prices rather than free of charge. A more detailed description is provided in Section 4.6.1 and Chapter 7.

The following steps are taken to ensure that an accrual basis is followed in assessing the components of the income approach to GDP.

- a) In statistical surveys (see Section 4.7.), the compensation of employees is recorded on an accrual basis, which is consistent with national accounts concepts. It means that the compensation of employees is recorded during the period in which the work is done.
- b) The adjustments made to convert the recording of taxes on production and import to an accrual basis are addressed. To comply with the accrual time of recording, ESA 2010 offers three possible methods. Two of them are applicable when declarations and assessments are used and one in the case of cash receipts. Since cash receipts are used in Estonia, the third method is used. According to the provided methodology, such data must be time-adjusted so that the cash is attributed when the activity took place to generate the tax liability. This adjustment is based on the average time difference between the activity and cash receipt. Statistics Estonia applies this methodology if three criteria are satisfied:
 - The tax has a significant share in total tax revenue; the threshold is 1% in most cases.
 - There needs to be a lag between the time when the tax liability is created and the time when the tax is paid.
 - The tax receipts need to be volatile in time.

There are no other taxes on production that satisfy these conditions, so no adjustment is made to cash-based data.

- c) Subsidies on production are already based on accounting data and that is in line with the accrual time of recording. Therefore, no adjustments are made.

4.4. Transition from private accounting and administrative concepts to ESA 2010 national accounts concepts

The measurement of the compensation of employees is in line with ESA 2010. Income in kind is a key issue in the transition from business accounting concepts to ESA 2010 concepts. In national accounts, adjustments are made for income in kind and for tips paid in restaurants and hotels and to taxi drivers, which are described in Section 7.1.3.5.2. No adjustments are made for tips in other areas. In addition, for measuring the compensation of employees, estimates are made for envelope salaries (payments to employees that are not accounted for as salaries in business reports for avoiding the social security tax) and for hidden activities, using the labour input method. For more information, see Chapter 7.

As the income approach to calculating GDP is not independent, the measures taken to ensure a satisfactory transition from private accounting and from government accounting to ESA 2010 concepts are the same as for the GDP by production and expenditure approaches. See the detailed description provided in Section 3.4.2. In Section 3.4.2, the treatment of the following issues is described: durable goods of small value; major repairs and renovations; valuation of inventories; computer software and databases; entertainment, literary and artistic originals; research and development; insurance service charge; production and allocation of FISIM; leasing; the treatment of provisioning between private/public accounting and national accounts, especially in reference to the decommissioning of large capital assets.

As the GDP by income approach is not an independent approach, no other conceptual adjustments are made here.

4.5. Roles of direct and indirect estimation methods, benchmarks and extrapolations

Direct estimation methods are based on sources that give a direct value for the variable to be estimated. Indirect estimation methods are used in the absence of a direct value and may comprise models, the use of ratios, etc.

Most of the basic data available for the compensation of employees and other taxes and subsidies on production are directly measured. However, gross operating surplus and mixed income are calculated indirectly as the residual between the GDP estimated via the production approach and the remaining components of the income approach.

The calculation of CFC is based on the indirect method and on standard annual data sources designed especially for national accounting purposes. The computation of CFC is based on accumulated capital stocks, investments reported by enterprises differentiated by type of material and immaterial asset, and using average service lives and the depreciation rate by asset type. The ESA 2010 methodology suggests the use of the perpetual inventory model (PIM) for the calculation of the stock of fixed assets (§3.141) in cases where direct information on the stock of fixed assets is missing. In Estonia, CFC is calculated annually, using a simplified version of the PIM. The methodology was developed by special working groups during the Phare 2000 and Phare 2004 projects and was reviewed in 2018. The use of PIM requires estimations and assumptions about expected economic lifetime, discard pattern and the selection of the most appropriate mathematical function of depreciation. The use of a simplified version is due to a very short time series of GFCF available (since 1995). The service lives and discard rates used have been regularly reviewed, and different depreciation functions have been tested. For more information, see Section 4.12.

In 2021, the net operating surplus of owner-occupied dwellings and associated land is calculated as the sum of the average value of the net stock of owner-occupied dwellings and the average value of land associated with owner-occupied dwellings multiplied by 2.5% (rate of return on owner-occupied dwellings and associated land). For more information about dwelling services, see Section 3.18.2.

Most of the exhaustiveness adjustments are not based on direct observations and should therefore be considered as indirect methods. This applies, for example, to the corrections for tips, envelope salaries and hidden labour activities mentioned above, which are to a large extent based on the estimates of national accounts experts.

Table 4.4 provides the estimation method used (e.g. survey-based, administrative data, models – CFC, benchmark extrapolations, other) for each component.

Table 4.4 Estimation methods used by income component, 2021

Component	Surveys and censuses	Administrative records	Combined data	Benchmark extrapolations	Commodity Flow Model	CFC (PIM)	Dwellings - stratification method	FISIM	Insurance	Other extrapolations and models	Other sources
Compensation of employees		X	X								
Gross operating surplus		X				X			X		
Gross mixed income						X					
Taxes on production and imports		X	X								
Subsidies	X	X	X								

4.6. Main approaches taken with respect to exhaustiveness

The main adjustments made in the income approach to ensure exhaustiveness are for income in kind and for tips paid in restaurants, hotels and taxi service activities. No adjustments are made for tips in other areas. In addition, for measuring the compensation of employees, estimates are made for envelope salaries (payments to employees that are not accounted for as salaries in business reports to avoid social security tax) and for hidden activities using the labour input method. For more information, see Sections 4.7–4.12 and Chapter 7.

4.6.1. Wages and salaries in kind

In 2021, wages and salaries in kind were estimated at 124.8 million euros. In Estonia, estimates for payments in kind are based on three sources: administrative data of the Tax and Customs Board (Form Fringe Benefits), the Estonian Social Survey (ESS) and the Household Budget Survey (HBS). The Tax and Customs Board data are the starting point in the calculation of income in kind in the non-financial and financial corporations and NPISH sectors. Public Sector Financial Statements (PSFS) are used for the general government sector calculations. The HBS and the ESS are additional sources used for comparisons and further calculations. For a detailed description, see Chapter 7.

4.6.2. Tips

Tipping is not very common in Estonia. However, the output and value added of hotels, restaurants and bars, and taxi drivers are adjusted for tips. In 2021, the total amount of tips was estimated at 27.0 million euros, or 0.1% of the GDP. This type of adjustment is described in Section 7.1.3.5.2.

Table 4.5 is a summary table showing the size of the various exhaustiveness adjustments in the breakdown of income components and types of non-exhaustiveness (N1–N7).

Table 4.5 Exhaustiveness adjustments by income component, 2021
(million euros)

Component	Total	Type of non-exhaustiveness						
		N1	N2	N3	N4	N5	N6	N7
Compensation of employees	422.3	55.1	1.1	0.0	0.0	0.0	214.2	151.8
..Non-financial corporations	408.2	55.1	1.1	0.0	0.0	0.0	214.2	137.8
..Financial corporations	6.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0
..General government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
..Households	7.4	0.0	0.0	0.0	0.0	0.0	0.0	7.4
..NPISH	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Gross operating surplus	354.3	128.5	43.7	0.0	0.0	0.0	117.4	64.8
Mixed income	222.0	66.4	40.0	107.5	0.0	0.0	6.8	1.3
Taxes on production and imports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subsidies	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

4.7. Compensation of employees

The compensation of employees includes wages and salaries (D.11) and employers' social contributions (D.12); see Table 4.6. Wages and salaries are paid to the employees working under an employment contract for a fixed or unfixed period (including contracts for seasonal work), persons with a service contract and employees working under the Public Services Act. Wages and salaries include payments to employees for time actually worked as well as remuneration and payments for days not actually worked, such as vacation pay, compensation and pay for work stoppage, pay for short-time working, pay for assimilated leave in the event of vocational training and obtaining formal education, and payments in kind. The measurement of the compensation of employees is in line with ESA 2010, while further adjustments are made for income in kind, tips, hidden activities and envelope salaries.

For more information on employers' social contributions, see Section 4.7.2.

Table 4.6 Compensation of employees, 2021
(million euros)

Component	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	11,336.5	8,230.8	353.3	2,518.8	35.2	198.4
..in cash	11,211.7	8,112.7	347.3	2,518.8	35.2	197.7
..in kind	124.8	118.2	6.0			0.7
Social contributions	3,736.2	2,597.7	125.6	940.9	8.6	63.3
..actual	3,587.3	2,547.8	123.1	845.1	8.5	62.7
..imputed	148.9	49.9	2.4	95.8	0.1	0.6
Total	15,072.7	10,828.6	478.9	3,459.7	43.9	261.7

The sections below provide information on the components of the compensation of employees (wages and salaries in cash, wages and salaries in kind, employers' actual and imputed social contributions) by NACE section and institutional sector (S.11–S.15).

For activity NACE A in the non-financial corporations sector, the compensation of employees is calculated on the basis of the statistical survey "Annual data of agricultural, forestry and fishing enterprises". For calculating the compensation of employees, adjustments are made for wages and salaries in kind, hidden labour and envelope salaries.

For activities NACE B – NACE S in the non-financial corporations sector, data on wages and salaries and employers' social contributions are derived from the SBS survey. Adjustments are made for income in kind, tips paid in restaurants and hotels, envelope salaries and non-registered economy.

For NACE K in the financial sector, the compensation of employees is calculated on the basis of administrative sources of the Estonian Tax and Customs Board. For calculating the compensation of employees, adjustments are made for wages and salaries in kind, hidden labour and envelope salaries.

For the general government sector, most of the data on the compensation of employees are derived from the PSFS system (see Section 3.21). The breakdown of staff costs allows estimating the main categories of the compensation of employees as wages and salaries and employers' social contributions. For the general government sector, all employees are covered.

For households, the compensation of employees represents a small part of value added, as it is calculated only for sole proprietors with employees. Declarations on the business income of sole proprietors received from an administrative source (the Tax and Customs Board) are used as the data source for estimating wages and salaries and social tax. Sole proprietors have to report the amount of wages and salaries paid to employees, fringe benefits granted to employees, social tax paid on behalf of employees and social tax paid on business income. Adjustments are made for daily allowances and for tips paid to taxi drivers.

Data on the compensation of employees of NPISH are collected with the annual survey of non-profit institutions. For calculation of wages and salaries and social contributions, the data of the Tax and Customs Board are used. For the NPISH sector, adjustments are made for the private use of business cars and for daily allowances by allocating 30% of the payments for business trips to the compensation of employees. No other adjustments have been made for NPISH.

4.7.1. Compensation of employees by activity and by sector

4.7.1.1. Agriculture, forestry and fishing (NACE Rev. 2 Section A)

In agriculture, forestry and fishing, the compensation of employees amounted to 304.0 million euros (see Table 4.7) and to 2.0% of the total compensation of employees. Adjustments to wages and salaries were made for income in kind (2.1 million euros, or 0.9% compared to initial estimates).

Table 4.7 Compensation of employees in NACE Section A by sector, 2021
(million euros)

Agriculture, forestry and fishing (A)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	230.5	222.1			8.3	
..in cash	228.4	220.1			8.3	
..in kind	2.1	2.1				
Social contributions	73.6	70.8			2.7	
..actual	72.0	69.3			2.7	
..imputed	1.6	1.6			0.0	
Total	304.0	293.0			11.1	

4.7.1.2. Mining and quarrying (NACE Rev. 2 Section B)

In mining and quarrying, the compensation of employees amounted to 60.3 million euros (see Table 4.8) with a 0.4% share in the total compensation of employees. Adjustments to wages and salaries were made for income in kind (0.5 million euros, or 1.1% compared to initial estimates).

Table 4.8 Compensation of employees in NACE Section B by sector, 2021
(million euros)

Mining and quarrying (B)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	45.0	45.0			0.0	
..in cash	44.5	44.5			0.0	
..in kind	0.5	0.5				
Social contributions	15.3	15.3			0.0	
..actual	14.9	14.9			0.0	
..imputed	0.4	0.4				
Total	60.3	60.3			0.0	

4.7.1.3. Manufacturing (NACE Rev. 2 Section C)

In manufacturing, the compensation of employees amounted to 2,598.6 million euros (see Table 4.9) with a 17.2% share in the total compensation of employees. Adjustments to wages and salaries were made for income in kind (22.2 million euros, or 1.1% compared to initial estimates).

Table 4.9 Compensation of employees in NACE Section C by sector, 2021
(million euros)

Manufacturing (C)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	1,957.5	1,956.7			0.9	
..in cash	1,935.4	1,934.5			0.9	
..in kind	22.2	22.2				
Social contributions	641.1	640.8			0.3	
..actual	624.7	624.5			0.3	
..imputed	16.4	16.4			0.0	
Total	2,598.6	2,597.5			1.1	

4.7.1.4. Electricity, gas, steam and air conditioning supply (NACE Rev. 2 Section D)

In electricity, gas, steam and air conditioning supply, the compensation of employees amounted to 151.5 million euros (see Table 4.10) with a 1.0% share in the total compensation of employees. Adjustments to wages and salaries were made for income in kind (1.0 million euros, or 0.9% compared to initial estimates).

Table 4.10 Compensation of employees in NACE Section D by sector, 2021
(million euros)

Electricity, gas, steam and air conditioning supply (D)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	113.1	113.1			0.0	
..in cash	112.1	112.1			0.0	
..in kind	1.0	1.0				
Social contributions	38.5	38.5				
..actual	37.5	37.5				
..imputed	0.9	0.9				
Total	151.5	151.5			0.0	

4.7.1.5. Water supply; sewerage, waste management and remediation activities (NACE Rev. 2 Section E)

In water supply, sewerage, waste management and remediation activities, the compensation of employees amounted to 92.6 million euros (see Table 4.11), or to 0.6% in the total compensation of employees. Adjustments to wages and salaries were made for income in kind (0.9 million euros, or 1.2% compared to initial estimates).

Table 4.11 Compensation of employees in NACE Section E by sector, 2021
(million euros)

Water supply; sewerage, waste management and remediation activities (E)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	69.6	69.6			0.0	
..in cash	68.8	68.8			0.0	
..in kind	0.9	0.9				
Social contributions	23.0	23.0			0.0	
..actual	22.6	22.6			0.0	
..imputed	0.4	0.4				
Total	92.6	92.6			0.0	

4.7.1.6. Construction (NACE Rev. 2 Section F)

In construction, the compensation of employees amounted to 1,176.7 million euros (see Table 4.12), or to 7.8% of the total compensation of employees. Adjustments to wages and salaries were made for income in kind (9.9 million euros, or 1.1% compared to initial estimates).

Table 4.12 Compensation of employees in NACE Section F by sector, 2021
(million euros)

Construction (F)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	908.2	907.8			0.4	
..in cash	898.3	897.9			0.4	
..in kind	9.9	9.9				
Social contributions	268.5	268.4			0.0	
..actual	264.9	264.8			0.0	
..imputed	3.6	3.6				
Total	1,176.7	1,176.2			0.5	

4.7.1.7. Wholesale and retail trade; repair of motor vehicles and motorcycles (NACE Rev. 2 Section G)

In wholesale and retail trade and repair of motor vehicles and motorcycles, the compensation of employees amounted to 1,956.1 million euros (see Table 4.13), or to 13.0% of the total compensation of employees. Adjustments to wages and salaries were made for income in kind (28.9 million euros, or 2.0% compared to initial estimates).

Table 4.13 Compensation of employees in NACE Section G by sector, 2021
(million euros)

Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	1,482.2	1,480.8			1.4	
..in cash	1,453.2	1,451.9			1.4	
..in kind	28.9	28.9				
Social contributions	474.0	473.6			0.4	
..actual	464.4	464.1			0.4	
..imputed	9.5	9.5			0.0	
Total	1,956.1	1,954.4			1.7	

4.7.1.8. Transportation and storage (NACE Rev. 2 Section H)

In transportation, the compensation of employees amounted to 938.9 million euros (see Table 4.14) with a 6.2% share in the total compensation of employees. Adjustments to wages and salaries were made for income in kind (7.3 million euros, or 1.0% compared to initial estimates).

Table 4.14 Compensation of employees in NACE Section H by sector, 2021
(million euros)

Transportation and storage (H)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	720.7	648.8		63.8	8.2	
..in cash	713.4	641.5		63.8	8.2	
..in kind	7.3	7.3				
Social contributions	218.1	196.7		21.3	0.1	
..actual	214.2	192.9		21.1	0.1	
..imputed	4.0	3.8		0.2	0.0	
Total	938.9	845.5		85.1	8.3	

4.7.1.9. Accommodation and food service activities (NACE Rev. 2 Section I)

In accommodation and food service activities, the compensation of employees amounted to 316.2 million euros (see Table 4.15) with a 2.1% share in the total compensation of employees. Adjustments to wages and salaries were made for income in kind (1.1 million euros, or 0.5% compared to initial estimates).

Table 4.15 Compensation of employees in NACE Section I by sector, 2021
(million euros)

Accommodation and food service activities (I)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	242.7	242.4			0.2	
..in cash	241.5	241.3			0.2	
..in kind	1.1	1.1				
Social contributions	73.6	73.5			0.1	
..actual	71.7	71.7			0.1	
..imputed	1.9	1.9			0.0	
Total	316.2	315.9			0.3	

4.7.1.10. Information and communication (NACE Rev. 2 Section J)

In information and communication, the compensation of employees amounted to 1,293.5 million euros (see Table 4.16) with an 8.6% share in the total compensation of employees. Adjustments to wages and salaries were made for income in kind (19.2 million euros, or 2.0% compared to initial estimates).

Table 4.16 Compensation of employees in NACE Section J by sector, 2021
(million euros)

Information and communication (J)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	982.7	940.4		42.3	0.1	
..in cash	963.5	921.1		42.3	0.1	
..in kind	19.2	19.2				
Social contributions	310.8	296.5		14.2	0.0	
..actual	307.2	293.0		14.2	0.0	
..imputed	3.6	3.5		0.1		
Total	1,293.5	1,236.9		56.5	0.1	

4.7.1.11. Financial and insurance activities (NACE Rev. 2 Section K)

In financial and insurance activities, the compensation of employees amounted to 478.9 million euros (see Table 4.17) with a 3.2% share in the total compensation of employees. Adjustments to wages and salaries were made for income in kind (6.0 million euros, or 1.7% compared to initial estimates).

Table 4.17 Compensation of employees in NACE Section K by sector, 2021
(million euros)

Financial and insurance activities (K)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	353.3		353.3		0.0	
..in cash	347.3		347.3		0.0	
..in kind	6.0		6.0			
Social contributions	125.6		125.6		0.0	
..actual	123.1		123.1		0.0	
..imputed	2.4		2.4			
Total	478.9		478.9		0.0	

4.7.1.12. Real estate activities (NACE Rev. 2 Section L)

In real estate activities, the compensation of employees amounted to 218.1 million euros (see Table 4.18) with a 1.4% share in the total compensation of employees. Adjustments to wages and salaries were made for income in kind (3.8 million euros, or 2.3% compared to initial estimates).

Table 4.18 Compensation of employees in NACE Section L by sector, 2021
(million euros)

Real estate activities (L)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	167.2	125.4		10.0	0.1	31.8
..in cash	163.5	121.6		10.0	0.1	31.8
..in kind	3.8	3.8				0.0
Social contributions	50.8	37.2		3.4	0.0	10.3
..actual	50.2	36.6		3.3	0.0	10.2
..imputed	0.6	0.6		0.0		0.0
Total	218.1	162.6		13.4	0.1	42.0

4.7.1.13. Professional, scientific and technical activities (NACE Rev. 2 Section M)

In professional, scientific and technical activities, the compensation of employees amounted to 909.6 million euros (see Table 4.19) with a 6.0% share in the total compensation of employees. Adjustments to wages and salaries were made for income in kind (11.6 million euros, or 1.7% compared to initial estimates).

Table 4.19 Compensation of employees in NACE Section M by sector, 2021
(million euros)

Professional, scientific and technical activities (M)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	693.6	580.1		103.5	10.0	
..in cash	682.0	568.4		103.5	10.0	
..in kind	11.6	11.6				
Social contributions	216.0	178.1		34.5	3.3	
..actual	213.7	176.2		34.3	3.3	
..imputed	2.2	1.9		0.3	0.0	
Total	909.6	758.2		138.0	13.3	

4.7.1.14. Administrative and support service activities (NACE Rev. 2 Section N)

In administrative and support service activities, the compensation of employees amounted to 599.3 million euros (see Table 4.20) with a 4.0% share in the total compensation of employees. Adjustments to wages and salaries were made for income in kind (4.5 million euros, or 1.0% compared to initial estimates).

Table 4.20 Compensation of employees in NACE Section N by sector, 2021
(million euros)

Administrative and support service activities (N)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	457.1	456.6			0.4	
..in cash	452.5	452.1			0.4	
..in kind	4.5	4.5				
Social contributions	142.2	142.2			0.0	
..actual	139.2	139.1			0.0	
..imputed	3.0	3.0			0.0	
Total	599.3	598.8			0.5	

4.7.1.15. Public administration and defence; compulsory social security (NACE Rev. 2 Section O)

In public administration and defence and compulsory social security, the compensation of employees amounted to 1,206.1 million euros (see Table 4.21) with an 8.0% share in the total compensation of employees.

Table 4.21 Compensation of employees in NACE Section O by sector, 2021
(million euros)

Public administration and defence; compulsory social security (O)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	837.9			837.9		
..in cash	837.9			837.9		
..in kind						
Social contributions	368.2			368.2		
..actual	283.5			283.5		
..imputed	84.7			84.7		
Total	1,206.1			1,206.1		

4.7.1.16. Education (NACE Rev. 2 Section P)

In education, the compensation of employees amounted to 1,164.9 million euros (see Table 4.22) with an 7.7% share in the total compensation of employees. Adjustments to wages and salaries were made for income in kind (1.4 million euros, or 0.2% compared to initial estimates).

Table 4.22 Compensation of employees in NACE Section P by sector, 2021
(million euros)

Education (P)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	868.1	41.1		788.4	0.0	38.6
..in cash	866.6	39.8		788.4	0.0	38.4
..in kind	1.4	1.3				0.1
Social contributions	296.8	12.7		271.2	0.0	13.0
..actual	290.7	12.5		265.4	0.0	12.8
..imputed	6.2	0.2		5.8	0.0	0.2
Total	1,164.9	53.8		1,059.5	0.0	51.5

4.7.1.17. Human health and social work activities (NACE Rev. 2 Section Q)

In human health and social work activities, the compensation of employees amounted to 1,143.3 million euros (see Table 4.23) with a 7.6% share in the total compensation of employees. Adjustments to wages and salaries were made for income in kind (2.8 million euros, or 0.3% compared to initial estimates).

Table 4.23 Compensation of employees in NACE Section Q by sector, 2021
(million euros)

Human health and social work activities (Q)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	857.5	273.1		556.3	3.1	25.0
..in cash	854.7	270.4		556.3	3.1	24.9
..in kind	2.8	2.7				0.1
Social contributions	285.8	89.4		187.5	1.0	7.9
..actual	280.6	88.0		183.8	1.0	7.8
..imputed	5.2	1.3		3.7	0.0	0.1
Total	1,143.3	362.5		743.8	4.1	32.9

4.7.1.18. Arts, entertainment and recreation (NACE Rev. 2 Section R)

In arts, entertainment and recreation, the compensation of employees amounted to 293.0 million euros (see Table 4.24) with a 1.9% share in the total compensation of employees. Adjustments to wages and salaries were made for income in kind (0.9 million euros, or 0.4% compared to initial estimates).

Table 4.24 Compensation of employees in NACE Section R by sector, 2021
(million euros)

Arts, entertainment and recreation (R)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	219.4	59.1		114.9	0.1	45.3
..in cash	218.5	58.3		114.9	0.1	45.2
..in kind	0.9	0.7				0.1
Social contributions	73.6	19.3		40.0	0.0	14.3
..actual	72.0	18.8		38.9	0.0	14.2
..imputed	1.6	0.4		1.0		0.1
Total	293.0	78.3		154.9	0.1	59.7

4.7.1.19. Other service activities (NACE Rev. 2 Section S)

In other service activities, the compensation of employees amounted to 171.0 million euros (see Table 4.25) with a 1.1% share in the total compensation of employees. Adjustments to wages and salaries were made for income in kind (0.8 million euros, or 0.6% compared to initial estimates).

Table 4.25 Compensation of employees in NACE Section S by sector, 2021
(million euros)

Other service activities (S)	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries	130.2	68.7		1.8	2.0	57.7
..in cash	129.4	68.2		1.8	2.0	57.4
..in kind	0.8	0.5				0.3
Social contributions	40.8	21.7		0.6	0.6	17.9
..actual	40.2	21.3		0.6	0.6	17.7
..imputed	0.6	0.4		0.0	0.0	0.2
Total	171.0	90.4		2.4	2.6	75.6

4.7.1.20. Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (NACE Rev. 2 Section T)

In the activities of households as employers, only the household sector is involved. For NACE Section T, only gross mixed income is calculated and no adjustments for compensation of employees are made.

Next, information is provided on the measures taken to ensure that all employees are covered by the estimates of the compensation of employees. The following aspects are addressed:

- a) Transactions from resident employers to resident and non-resident employees

For all institutional sectors, the data sources used for estimating the compensation of employees offer the required information about transactions from resident employers to resident and non-resident employees.

- b) Adjustments are made for those not covered by administrative sources due to thresholds; for example, in cases where income falls below a threshold for the payment of income tax.

SE makes estimates for hidden and not covered labour and envelope salaries because of the high threshold for the payment of income tax. Estimates for hidden labour are based on the labour input method. The LFS data are used for comparing employment data from the SBS and other surveys. The Labour Force Survey results are used for making adjustments for the non-observed economy. The Labour Force Survey data on employees by activity are multiplied by the output, intermediate consumption and value added components per unit of employment, which are calculated from the SBS data for enterprises with 1–9 employees. In addition to the local labour force, some people stay and work in Estonia illegally as they have no residence permit and work permit. Based on the expert assessment of employers, there were approximately 3,000 such people in Estonia in 2021. The estimation methods are described in Section 7.1.3.1.

Envelope salaries, defined as wages paid but not reported officially in business accounts and tax statements, are a common phenomenon in Estonia. There are two ways to provide envelope salaries:

- a) under-reporting the output by concealing the enterprise's income;
- b) over-reporting intermediate consumption.

The methodology of estimating envelope salaries is described in detail in Section 7.1.3.4.

Specific adjustments are made for tax evasion.

SE makes estimates for measuring VAT fraud; see the detailed description provided in Section 7.1.3.4.

4.7.2. Wages and salaries

In Estonian national accounts, the estimates of wages and salaries in cash (§4.03 of ESA 2010) and in kind (§4.05 of ESA 2010) are comprehensive and items listed in §4.07 of ESA 2010 are excluded.

Wages and salaries in cash include those earned during regular working hours; enhanced payments (for overtime, night work, weekend work, for disagreeable or hazardous working conditions, or cost of living allowances, local allowances and expatriation allowances); bonuses linked to the overall performance of the enterprise made under incentive schemes; wages and salaries in the form of productivity and other bonuses, Christmas and New Year bonuses; '13th to 14th month' pay; allowances for transport to and from work, holiday pay for official holidays or annual holidays; commissions, tips, attendance and directors' fees paid to employees; payments made by employers to their employees under saving schemes; exceptional payments to employees who leave the enterprise, where those payments are not linked to a collective agreement; housing allowances paid in cash by employers to their employees.

Any sickness compensation obtained during sickness or maternity leave is deducted from wages and salaries. Also, any expenditure by employers necessary for the employers' production process is excluded from wages and salaries.

Wages and salaries in the form of benefits in kind consist of goods and services or other benefits that are offered by employers free of charge or at a lower price and that employees may use at their leisure and discretion according to their own or their family's need.

More information on how wages and salaries in kind are estimated is provided in Chapter 7, Section 7.1.3.5.1.

To ensure the complete coverage of items known to be under-recorded in income declarations, such as tips and gratuities, special estimates are made in national accounts for income in kind and for tips paid in restaurants and hotels and to taxi drivers. These estimates are described in Section 7.1.3.5.2. No adjustments are made for tips in other areas. To improve the exhaustiveness of the measurement of the compensation of employees, SE makes estimates for envelope salaries (payments to employees that are not accounted as salaries in business reports to avoid social security tax) and hidden activities using the labour input method. For more information, see Table 4.26 below and Sections 7.1.3.1 and 7.1.3.4.

Table 4.26 Adjustments made to wages and salaries, 2021
(million euros)

	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Wages and salaries in cash	11,211.7	8,112.7	347.3	2,518.8	35.2	197.7
Wages and salaries in cash from primary source	10,782.5	7,699.9	345.7	2,518.8	26.1	192.0
Tips	27.0	19.6			7.4	
Envelope salaries	215.4	215.4				
Non-registered economy	55.1	55.1				
Wages and salaries in kind	124.8	118.2	6.0			0.7
Daily allowances	131.7	122.8	1.6		1.7	5.7
Total wages and salaries	11,336.5	8,230.8	353.3	2,518.8	35.2	198.4
Total adjustments	554.0	531.0	7.6		9.1	6.3
As % of initial estimate	5.1	6.9	2.2		35.1	3.3

For the verification of basic data, estimates for social contributions by institutional sector and data on social tax from the Tax and Customs Board are compared at the aggregate level. If discrepancies are found, adjustments are made to the initial estimates of wages and salaries and employers' social contributions.

4.7.3. Employers' social contributions

The estimates of employers' social contributions are comprehensive and correctly divided into pension and non-pension contributions (§4.09 and §4.10 of ESA 2010).

Employers' social contributions are social contributions payable by employers to social security schemes or other employment-related social insurance schemes to secure social benefits for their employees.

Employers' social contributions (D.12) consist of actual (D.121) and imputed social contributions (D.122).

Employers' actual social contributions (D.121) are statutory social contributions paid by employers to the budget of the state health insurance fund and pension insurance fund.

Employers pay social tax on payments in cash and in kind made to natural persons. The social tax rate is generally 33%, with 13% of the taxable amount paid to the health insurance budget and 20% to the pension fund. From 1 January 1999, the social tax payable is personalised and taken into account in making pension payments.

An unemployment insurance premium payable to the Unemployment Insurance Fund was introduced from 2002. Unemployment insurance is a type of compulsory insurance, the purpose of which is to provide labour market services, pay labour market benefits (except unemployment allowance), upon unemployment provide insured persons partial compensation for lost income during the period of seeking work, compensate the expenses related to the termination of employment contracts (to employees) and service relationships (to officials) in the case of lay-offs, and cover the claims of employees upon the insolvency of employers. The unemployment insurance premium is a type of compulsory insurance payment for the purpose of financing unemployment insurance, which is paid by:

- insured persons;
- employers.

In 2021, the rate of the unemployment insurance premium was 1.6% for an insured person and 0.8% for an employer.

In addition, employers' imputed social contributions (D.122) cover sickness benefits paid by employers. Starting from 1 July 2009, the procedure for the payment of sickness benefits was changed. An employer has to pay sickness benefit to an employee from the 4th until the 8th day of sickness; starting from the 9th day of illness, the benefit is paid by the Estonian Health Insurance Fund. Therefore, sickness benefits paid by employers are included under employers' imputed social contributions (D.122) starting from 2009. Employers' imputed social contributions also include redundancy payments.

For all institutional sectors, data on employers' social contributions are derived from statistical and administrative sources.

In NACE Section A, for non-financial corporations, employers' social contributions are calculated on the basis of the statistical survey "Annual data of agricultural, hunting, forestry and fishing enterprises", SBS data, and the Tax and Customs Board data.

In NACE Sections B–S, for non-financial corporations, data on employers' social contributions are derived from the SBS survey of enterprises and the Tax and Customs Board.

For financial corporations, employers' social contributions are calculated on the basis of the Tax and Customs Board data.

For the general government sector, most of the data on employers' social contributions are derived from the PSFS system and from the Tax and Customs Board.

Declarations on the business income of sole proprietors received from an administrative source (the Tax and Customs Board) are used as the data source for estimating employers' social contributions in the households sector. Sole proprietors have to report the amount of wages and salaries paid to employees, fringe benefits granted to employees, social tax paid on behalf of employees and social tax paid on business income. In addition, the information used also includes declarations on income and social security, mandatory funded pension and unemployment insurance.

Data on employers' social contributions in the NPISH sector are collected with the annual survey of non-profit institutions. In addition, the information used also includes declarations on income and social security, mandatory funded pension and unemployment insurance.

4.8. Taxes on production and imports

Taxes on production and imports can be divided into taxes on products (D.21) and other taxes on production (D.29). The composition of D.21 can be seen in Section 3.28. Table 4.27 below provides the detailed breakdown of other taxes on production with figures for 2021. In Estonia, most taxes on production and imports are classified under D.21, with D.29 only accounting for approximately 6.8% of the total D.2 in 2021.

Table 4.27 Taxes on production, 2021

Code	Category	Value, million euros	% of total D.29
D.29A	Land tax	59.3	19.9
D.29B	Heavy goods vehicle tax	5.1	1.7
D.29E	Business and professional licences	5.4	1.8
D.29FA	Pollution charge	32.3	10.8
D.29FB	Revenue from the sale of emission permits	142.4	47.8
D.29H	Water abstraction charge	14.2	4.8
D.29H	Road and street closure tax	2.2	0.7
D.29H	Fishing charge	1.8	0.6
D.29H	Advertisement tax	6.8	2.3
D.29H	Contributions to the Guarantee Fund	28.5	9.6

For a more detailed breakdown of D.21 (taxes on products), see Section 3.28.

Next, a detailed description of the types of other taxes on production is presented.

4.8.1. Land tax

National land tax is paid on all land except:

- 1) land where economic activity is prohibited;
- 2) land of strict nature reserves and special management zones of protected areas and land of special management zones of species protection sites;
- 3) land adjacent to buildings of diplomatic or consular missions of foreign countries;
- 4) land under cemeteries, churches and temples of congregations;
- 5) land used by a foreign country or international organisation;
- 6) land used by the headquarters of allied forces. In addition, local land tax is not paid on land in municipal ownership or land in public use based on the decision of the local authority;
- 7) land in public use;
- 8) municipal land in the administrative area of the corresponding local government.

In Estonia, land tax is based on the market value of the land. Tax rates are set annually by local governments and vary between 0.1–2.5%.

In national accounts, the estimates are based on information from the declarations of the Tax and Customs Board.

4.8.2. Pollution charge

Pollution charges are paid according to the Environmental Charges Act and they are established and imposed based on the need for environmental protection and the economic and social situation of the state.

Pollution charges are imposed upon the emission of pollutants into ambient air, water bodies, groundwater and soil and upon waste disposal.

The state budget revenue obtained from environmental charges is used for the purposes of maintaining the state of the environment, restoration of natural resources and remedying environmental damage.

In national accounts, estimates are based on information from the monthly and annual reports of the Tax and Customs Board.

4.8.3. Revenue from the sale of emission permits

Until the year 2013, Estonia only allocated free allowances to polluting companies. The limit was set according to harmonised EU-wide rules and approved by the European Commission. In 2013, when the third phase of EU ETS programme commenced, the number of free permits decreased, and Estonia has also been selling emission permits. The number of permits to be sold by Estonia is determined by the historical emissions in the EU, achievements under the Kyoto protocol and the nation's relative wealth. Estonia is eligible for a derogation, which allows free allocation of emission permits to electricity generators who no longer apply for free allowances in the rest of Europe.

The trading of said permits is done via the European Energy Exchange (EEX) platform, as in most of Europe. On specific dates, countries offer a predetermined quantity of permits to the auction. The price is determined by the bids and is uniform for all transactions on the auction.

In national accounts, the revenue from sales of permits is recorded as D.29 in the year of surrender of the permits.

4.8.4. Water abstraction charge

Water abstraction charge is paid for the right to abstract water from a body of water or groundwater for special purposes. The water extraction charge is not required if:

- 1) the water is extracted for the purposes of producing hydro energy;
- 2) the water is extracted for the irrigation of agricultural land;
- 3) the water is used for fish farming;
- 4) the amount of water extracted from groundwater is less than 5 m³ in a nychthemeron, unless it is mineral water;
- 5) the amount of water extracted from a body of water is less than 30 m³ in a nychthemeron.

The rate's upper and lower limits are set by the law. The rates applied are based on the purpose of use and deficiency of water.

In national accounts, estimates are based on information from the monthly and annual reports of the Tax and Customs Board.

4.8.5. Contributions to the Guarantee Fund

Contributions to the Guarantee Fund are paid by financial institutions based on their stock of deposits held, volume of investment services, stock of assets in pension funds and sum of pension insurance payments in preceding periods. The payments are used to finance the activities of the Guarantee Fund, including the formation of necessary reserves.

For national accounts purposes, tax revenues are collected from Public Sector Financial Statements, and these figures can later also be crosschecked against the annual reports of the financial institutions.

4.8.6. Heavy goods vehicle tax

Heavy goods vehicle tax is paid for the following classes of vehicles that are intended for the carriage of goods:

- 1) lorries with a maximum authorised weight or gross laden weight of at least 12 tonnes;
- 2) road trains composed of trucks and trailers with a maximum authorised weight or gross laden weight of at least 12 tonnes.

Heavy goods vehicles of the fire and rescue service, the Defence Forces, National Defence League, Border Guard, police authorities and state and local government agencies are exempt from the heavy goods vehicle tax.

The tax is paid quarterly into the state budget and the tax authority is the Tax and Customs Board, which is also the main source of information for national accounts purposes.

4.8.7. Fishing charge

Fishing charges are paid for the right to fish and collect water plants from bodies of water under the jurisdiction of Estonia. The charges are paid by both professional and recreational activities. The revenues are allocated to the state budget.

4.8.8. Road and street closure tax

Road and street closure tax has to be paid in the case of the full or partial closure of a public street. The level of taxation differs, depending on the intensity of traffic, capacity of the road and traffic rerouting caused by the partial or full closure of the road, the time and day of closure and consequences due to the unauthorised closure of roads. The fee is paid to the relevant local government.

For national accounts purposes, the quarterly reports on the budgets of local governments are used as the main data source.

4.8.9. Advertisement tax

For advertisement tax, the object of taxation is advertising displayed in public areas which is located in the interior space of the structure or outside of the interior space and is directed at the public. The taxpayer is the direct owner of the object that displays the advertisement.

4.8.10. Business and professional licences

Payments for government licences and fees that are to be treated as other taxes on production are business and professional licences.

Government licences are taken into account in the sum that they are reported by the Tax and Customs Board in their detailed monthly report or in the PSFS.

The government licences treated as other taxes on production include:

- 1) state fees on activities according to the Gambling Act;
- 2) state fees on activities according to the Medicinal Products Act;
- 3) state fees on state activity licences and permits.

The reason for such treatment is that these fees satisfy the conditions for taxes; mainly in that they are unrequited or the “benefit” is small in relation to the payment.

Some of these taxes are not considered as a tax by the law but are treated as such in the light of the definitions given in ESA 2010. Such taxes include environmental charges, payments for licences and contributions to the Guarantee Fund.

4.8.11. Classification

Next, a description of the classification rules applied to taxes on production and imports is provided.

The Estonian legislation is examined to understand the specifics of the tax, and it is then compared to the ESA 2010 methodology. The most important aspects include the object of taxation, the grounds based on which the tax is calculated, the entity collecting the tax and the moment when the tax liability arises. Most cases are straightforward but sometimes the experience of other Member States is relied on or Eurostat officials are consulted. This was the case with contributions to the Guarantee Fund, which were agreed to be classified as D.29 for three reasons: 1) such was the experience of other countries, 2) this decision was based on the verdict of the EDP team, and 3) the specifics of the tax. The reason was mainly that the fees paid do not entail any supervisory duties by the Guarantee Fund, nor are the tax liabilities bound to the amount of products offered by the taxable entity.

Other borderline cases that have been classified as other taxes on production include:

- 1) water abstraction charge;
- 2) business and professional licences;
- 3) pollution charge;
- 4) fishing charge.

None of these charges is listed as a tax in the Estonian legislation, but they are treated as other taxes on production (D.29) for national accounts purposes. This treatment results from §4.23 of ESA 2010, which describes the cases to be included under D.29.

§20.169 of ESA 2010 states that “amounts declared but deemed uncollectible should not be recorded as revenue”. Statistics Estonia uses cash-based figures and therefore there is no need to adjust the revenue for amounts unlikely to be collected.

4.9. Subsidies

Next, the most important types of subsidies are presented in Table 4.28, including figures for the year 2021.

Subsidies on products paid for transportation purposes and subsidies on production for agricultural production were the most important subsidies in Estonia in 2021. For further information, see Chapter 3.29.

Table 4.28 Subsidies, 2021
(million euros)

ESA code	Type of subsidy	Value
D.3	Total subsidies	611.3
D.31	Subsidies on products	126.8
D.319	Subsidies for passenger rail transport	0.0
D.319	Subsidies for passenger road transport by bus, trolley bus or tram	64.9
D.319	Subsidies for passenger water transport	0.4
D.319	Agricultural subsidies	22.6
D.319	Other subsidies	38.9
D.39	Subsidies on production	484.5
D.39	Subsidies for agricultural production	251.4
D.39	Other subsidies	233.1

Next, a description of the classification rules applied to subsidies is provided, particularly in borderline cases between a subsidy and items listed in §4.38 of ESA 2010.

For subsidies, the main data sources include:

- PSFS, which offers accrual-based information;

- annual reports of the Estonian Agricultural Registers and Information Board;
- data from units responsible for implementing different programmes (e.g. the Estonian Film Foundation). Additional information is used to divide expenditures between different transactions and to check PSFS data.

For detailed information about subsidies on products (D.31), see Chapter 3.

Other subsidies on production (D.39) include different kinds of support that is provided to enterprises to support their production (excluding support for purchasing capital goods, which is recorded as investment grants). For example:

- subsidies to agriculture that are not recorded as subsidies on products;
- various assistance benefits provided by Enterprise Estonia to enterprises to cover expenditures on training, development, etc.;
- subsidies to cover the cost of labour;
- assistance provided by the Ministry of Culture to support publishing activities (books, music, etc.), different cultural events, etc.;
- support for the development of films and film scenarios, distribution support and other similar support provided by the Estonian Film Foundation (support for the actual production of films does not fall under this category).

In the revised versions of the accounts, all subsidies (except subsidies to agriculture) are recorded in the same amount and in the same period as they are recorded in the PSFS. In the case of subsidies to agriculture, the amounts of subsidies are based on the amount of the support granted by the Estonian Agricultural Registers and Information Board (ARIB) in the specific year, and the division over the quarters is based on the distribution of output in the agricultural sector.

There are a number of exceptions in the case of some exceptional transactions that by the general rule could be classified as subsidies but are recorded under other transfers instead. Some of these exceptions are the following:

- a) Support for special bus lines for students and for state-commissioned education is recorded as social benefits in kind (D.631).
- b) Support for the actual production of films provided by the Estonian Film Foundation is recorded as investment grants (D.92).
- c) Expenditures of the Integration and Migration Foundation “Our People” are recorded as intermediate consumption (P.2) because, by their nature, these expenditures are the purchase of services.

A car scrap scheme does not exist in Estonia; therefore, no adjustments are made.

4.10. Gross operating surplus

Gross operating surplus is calculated by activity as a residual item between gross value added from the production approach and the components of value added. Gross operating surplus for the year 2021 was estimated at 12,131.8 million euros, operating surplus at 7,233.0 million euros (see Table 4.29).

Table 4.29 Operating surplus, 2021

NACE division	Operating surplus (million euros)	% of total
Agriculture, forestry and fishing (A)	238.9	3.3
Mining and quarrying (B)	40.4	0.6
Manufacturing (C)	873.6	12.1
Electricity, gas, steam and air conditioning supply (D)	533.4	7.4
Water supply; sewerage, waste management and remediation activities (E)	41.3	0.6
Construction (F)	357.4	4.9
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	1,105.6	15.3
Transportation and storage (H)	360.7	5.0
Accommodation and food service activities (I)	0.0	0.0
Information and communication (J)	211.9	2.9
Financial and insurance activities (K)	621.6	8.6
Real estate activities (L)	1,876.1	25.9
Professional, scientific and technical activities (M)	533.6	7.4
Administrative and support service activities (N)	197.8	2.7
Public administration and defence; compulsory social security (O)	0.0	0.0
Education (P)	14.4	0.2
Human health and social work activities (Q)	121.8	1.7
Arts, entertainment and recreation (R)	80.6	1.1
Other service activities (S)	24.0	0.3
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (T)	0.0	0.0
Total	7,233.0	100.0

Interest or rent paid on financial or tangible non-produced assets borrowed or rented is excluded from gross operating surplus and treated as property income (uses) in the allocation of primary income account. Interest and rent received on assets owned is also excluded from gross operating surplus and recorded as property income but treated as a resource in the allocation of primary income account.

4.11. Gross mixed income

Mixed income is generated in the activities of the households sector, where the distinction between wages and profits as an entrepreneur is most difficult to make. Mixed income contains both payments for work and entrepreneurship. This income is based on labour input, but it cannot be separated from the profit of self-employed persons, and therefore, it is called mixed income. Any wages and salaries self-employed persons pay themselves are wages and salaries and not mixed income. The imputed income obtainable from living in an owner-occupied dwelling is operating surplus and not mixed income.

For households, gross mixed income for the year 2021 was estimated at 643.1 million euros, mixed income at 492.2 million euros (see Table 4.30).

Table 4.30 Mixed income in households sector, 2021

NACE division	Mixed income (million euros)	% of total
Agriculture, forestry and fishing (A)	77.6	15.8
Mining and quarrying (B)	-0.2	-0.1
Manufacturing (C)	6.1	1.2
Electricity, gas, steam and air conditioning supply (D)	-1.2	-0.3
Water supply; sewerage, waste management and remediation activities (E)	-0.2	0.0
Construction (F)	105.1	21.4
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	34.7	7.0
Transportation and storage (H)	7.2	1.5
Accommodation and food service activities (I)	-0.6	-0.1
Information and communication (J)	0.7	0.1
Financial and insurance activities (K)	6.4	1.3
Real estate activities (L)	167.4	34.0
Professional, scientific and technical activities (M)	47.2	9.6
Administrative and support service activities (N)	-2.0	-0.4
Public administration and defence; compulsory social security (O)	0.0	0.0
Education (P)	2.0	0.4
Human health and social work activities (Q)	5.4	1.1
Arts, entertainment and recreation (R)	2.9	0.6
Other service activities (S)	17.6	3.6
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (T)	16.2	3.3
Total	492.2	100.0

4.12. Consumption of fixed capital

According to the ESA 2010 definition (§3.139), the consumption of fixed capital (CFC) is defined as the decline in the value of the stock of fixed assets owned and used by a producer, as a result of physical deterioration, normal obsolescence or accidental damage. Therefore, the consumption of fixed capital in national accounts is estimated in conjunction with the estimates of capital stock. Gross capital stock describes the value of all producers' fixed assets still in use, at the actual or estimated current purchaser's prices for new assets of the same type, regardless of the age and actual condition of the assets. A reduction in the efficiency of capital goods in gross stock is not taken into account. Gross capital stock comprises the cumulative value of past investments less cumulative retirements. Net capital stock represents the cumulative value of past investments less the cumulated consumption of fixed capital.

Estimates of consumption of fixed assets are made by institutional sector. The activity and asset breakdown is based on the classification of GFCF.

In Estonia, assets are broken down by type as outlined in Table 4.31.

Table 4.31 Consumption of fixed capital by sector and asset, 2021
(million euros)

Type of asset	S.11	S.12	S.13	S.14	S.15	S.1
Dwellings (AN.111)	45.5	0.0	16.2	578.6	0.0	640.3
Buildings other than dwellings (AN.1121)	741.0	11.9	313.4	38.6	10.7	1,115.5
Other structures (AN.1122)	196.1	0.0	90.5	3.1	0.0	289.8
Land improvements (AN.1123)	10.6	0.1	0.6	2.8	0.9	14.9
Transport equipment (AN.1131)	582.3	2.7	65.6	48.8	1.8	701.1
Computers (AN.11321)	67.2	3.4	45.5	0.3	0.5	116.9
Telecommunications equipment (AN.11322)	133.9	1.1	76.8	2.7	0.5	215.1
Other machinery and equipment (AN.1139)	864.1	7.4	51.6	28.8	4.7	956.6
Weapons systems (AN.114)	0.0	0.0	51.5	0.0	0.0	51.5
Cultivated biological resources (AN.115)	0.6	0.0	0.0	0.0	0.0	0.7
Research and development (AN.1171)	146.5	2.7	125.6	0.0	3.9	278.7
Mineral exploration (AN.1172)	2.3	0.0	0.2	0.0	0.0	2.5
Computer software and databases (AN.1173)	406.7	99.5	128.0	0.0	3.2	637.4
Entertainment, literary and artistic originals (AN.1174)	15.9	0.0	12.7	0.0	0.0	28.5
Total	3,212.7	128.7	978.3	703.7	26.2	5,049.6

Main aspects of the perpetual inventory model (PIM)

The core of the PIM is to add investment expenditures to capital stock each year and to subtract depreciation. Investment expenditures by assets and by industry are accumulated to get the estimates of capital stock every year while considering the service lives of the assets. The PIM requires information on the value of investment, price indices for capital goods, service lives, and methods of depreciation. In Estonia, the value of capital stock is estimated using the PIM for each institutional sector and every asset type whereby investment flows are accumulated and depreciated over time, giving rise to a stock of assets.

The consumption of fixed capital is calculated for all fixed assets, except animals. Intellectual property products are also covered: R&D (AN.1171); mineral exploration and evaluation (AN.1172); computer software and databases (AN.1173); entertainment and literary or artistic originals (AN.1174). In Estonia, there are no assets to be classified as other intellectual property products (AN.1179). The costs of ownership transfers associated with non-produced assets are also included.

The model is carried out at a suitable level of detail to ensure that assumptions made about service lives are appropriate to the asset to which they are applied. The model is calculated at the most detailed level of input data available in order to reproduce as realistically as possible the differences across different asset types as far as their service lives are regarded. The PIM method is applied for all sectors at the NACE A*64 (with some modifications) level and for 18 different asset types.

The PIM used for the calculations of the capital measures was reviewed and compared to the recommendations of the OECD manual “Measuring Capital” and the practices of statistical offices of other countries (mainly Statistics Finland and the Central Statistical Bureau of Latvia) in 2018.

4.12.1. Net capital stock

Net capital stock represents the cumulative value of past investments less the cumulated consumption of fixed capital.

Net capital stock at the end of year t is calculated using the formula

$$CNCS_t = ONCS_t + GFCF_t - CFC_t + OTH_t,$$

where

$CNCS_t$ – net capital stock at the end of year t ,

$ONCS_t$ – net capital stock at the beginning of year t ,

$GFCF_t$ – gross fixed capital formation of year t ,

CFC_t – consumption of fixed capital formation of year t ,

OTH_t – other changes to net capital stock of year t .

4.12.2. Gross capital stock

Gross capital stock describes the value of all producers' fixed assets still in use, at the actual or estimated current purchaser's prices for new assets of the same type, regardless of the age and actual condition of the assets. A reduction in the efficiency of capital goods in gross stock is not taken into account. Gross capital stock comprises the cumulative value of past investments less cumulative retirements.

Gross capital stock at the end of the year is calculated using the formula

$$CGCS_t = OGCS_t + GFCF_t - DISC_t + OTH_t,$$

where

$CGCS_t$ – gross capital stock at the end of year t ,

$OGCS_t$ – gross capital stock at the beginning of year t ,

$GFCF_t$ – gross fixed capital formation of year t ,

$DISC_t$ – retirements of capital assets of year t ,

OTH_t – other changes to gross capital stock of year t .

4.12.3. Consumption of fixed capital

The consumption of fixed capital is calculated using a constant, age-independent CFC rate. The use of age-independent rates for CFC provides a straightforward way for calculating the CFC using the capital stocks. This eliminates the need for age-efficiency curves of fixed assets for which there is no data. The only data available about the age-efficiency of fixed assets are the net stocks calculated by enterprises for their business accounts. As these stocks by definition are not the same as the net stocks used in national accounts and they are only available in historical prices not in replacement costs, it is not possible to estimate the age-efficiency curves.

For assets with a long service life, the consumption is assumed to be linear, i.e. a standard share is removed from the original value of the capital goods throughout the lifetime of the asset (for dwellings, buildings other than dwellings, roads and bridges and mineral exploration):

$$CFC_t = \left(OGCS_t + \frac{GFCF_t}{2} \right) * Depr$$

For assets with a short service life, the geometric depreciation method is used (for all other assets, excluding the ones mentioned above):

$$CFC_t = \left(CNCS_{t-1} * PI_t + \frac{GFCF_t}{2} \right) * Depr,$$

where

$OGCS_t$ – opening gross capital stock of year t,

$GFCF_t$ – gross fixed capital formation of year t,

$CNCS_{t-1}$ – net capital stock in year t-1 (i.e. the value of fixed assets at their market prices at the end of the year),

PI_t – price index of year t,

$Depr$ – CFC rate.

CFC is calculated from a half of the GFCF of the current year, since it is in accordance with the principle of estimating CFC on the average stock of the year. As the capital stock is measured in the average prices of the period, the GFCF is also expressed at the current (replacement) prices.

4.12.3.1. Consumption rates

The methodology for calculating the consumption rates used by Statistics Estonia is based on the methods used by Statistics Finland and is in accordance with the recommendations given in the OECD manual “Measuring Capital”. Consumption rates are calculated with the formula $d = R/E$, where E is the service life of the asset and R is 1 for assets where linear consumption is used, 1.65 for machinery and equipment, computers and transport equipment, and 2 for cultivated biological resources, software and databases, R&D, and entertainment, literary and art originals.

4.12.3.2. Retirements of capital assets

The PIM used by Statistics Estonia uses a bell-shaped retirement function recommended in the OECD manual “Measuring Capital”.

The retirement function used is based on the Weibull frequency function

$$F_T = \alpha \lambda (\lambda T)^{\alpha-1} e^{-(\lambda T)^\alpha},$$

where

T – age of the asset,

α – shape parameter,

λ – scale parameter.

There are multiple difficulties associated with using an age-dependent retirement rate. Firstly, this method requires a long time series of GFCF, which is not available for Estonia. The time series of GFCF is only available starting from 1995.

To get the necessary longer time series, the available GFCF time series was extended backwards using trends. The main problem here is that there may not be a clear trend for the GFCF for every sector, NACE and asset combination. In these cases, additional assumptions had to be made.

Secondly, the shapes and scales of the retirement functions had to be evaluated for all of the asset types. As there are no surveys done specifically for measuring the retirements of capital assets, these shapes had to be estimated indirectly.

For assessing the parameters of the retirement function, the extended GFCF time series and the data on capital stocks from the questionnaires were used. The parameters were chosen so that the differences between the gross stocks calculated using the extended GFCF series and the retirement function and the gross stocks reported by enterprises in the questionnaires would be minimal, with emphasis on minimising the differences for the last years where data on gross stocks were available.

The service lives and retirement function shape parameter were then compared to the service lives used by Statistics Finland and the Central Statistical Bureau of Latvia and to the “best practice” service lives provided by the OECD. If these results were similar, the calculated shape and scale parameters were chosen.

In many cases, this methodology gave unrealistic results. The main reason for this is that the stocks provided by enterprises in the questionnaires are in historical prices. As there is no information about the age structure of the assets, there is no way of reevaluating the stocks at replacement cost. For this reason, all the estimations of the PIM parameters were done in historical prices. This puts more emphasis on the retirements of newer assets and can give skewed results. This is especially true for assets with longer service lives. In the cases where the results were unrealistic or there were no data on capital stocks, the service lives based on the “best practice” service lives by OECD and the service lives used by Statistics Finland, and the shape parameter $\alpha = 2$ (linearly increasing risk of discard) were chosen.

The extended GFCF time series were used for estimating the retirement function parameters for all assets except dwellings. For dwellings, there is information on the age structure from the Population and Housing Censuses carried out in 2000 and 2011. A similar age structure was assumed for the starting stocks of 1995 as shown by the Population and Housing Census for the year 2000. Knowing the age structure, it is possible to estimate retirements without the need for a long time series of GFCF.

The chosen service lives and other PIM parameters are presented in Sections 4.12.4 to 0.

4.12.3.3. Starting stocks of 1995

The starting stocks of 1995 were calculated by applying the PIM to the extended GFCF time series used for estimating the retirement function parameters for all assets except dwellings. For applying the PIM, an additional estimation of the price changes before 1995 was needed to transfer the extended time series of GFCF from current prices to 1995 prices. As there are no real data on the prices for the period before 1995, the average price index for the known time series starting from 1995 was used. The PIM was then applied using the extended time series of GFCF in 1995 prices. The estimations of the 1995 starting stocks were inputted to the PIM with the known time series starting from 1995, and the results were compared to both the previous estimations of the starting stocks of 1995 based on the financial statements of enterprises and the data on capital stocks from the surveys conducted by Statistics Estonia. In case of large discrepancies, the extended GFCF time series and the retirement and consumption function parameters were reviewed and corrected if necessary.

For dwellings, the main methodology for calculating the stocks was developed as part of the Phare 2000 project. The 2011 stocks calculated using the data from the 2011 Population and

Housing Census were used as a benchmark and the 1995 stocks were chosen so that the stocks calculated using the PIM would match the benchmark stocks.

4.12.3.4. Recommendations of the GNP Committee on the Consumption of Fixed Capital on Roads, Bridges etc.

The recommendations of the GNP Committee on the Consumption of Fixed Capital on Roads, Bridges etc. (see GNIC/497 Rev.1) are applied. In 2014, Statistics Estonia improved the calculations of CFC for roads and bridges in accordance with the GNI Committee recommendation (GNIC/011/Rev. 1). Improvements have been made in the non-financial corporations (S.11) and general government (S.13) sectors, in which roads and bridges were distinguished.

The following aspects are addressed:

- a) A proper distinction between market and non-market sectors has been made in the PIM. The data for the market sector (S.11) come from SBS, while PSFS provide data for sector S.13 (non-market). The measurement of fixed asset stocks in the sectors is done separately.
- b) Statistics Estonia has reviewed whether all GFCF in public infrastructure has been properly allocated to activities and asset categories. For the government sector (S.13), the accounting records of the government sector are used. The PSFS system provides detailed information about roads and other structures.
- c) Government GFCF in construction is divided into dwellings (AN.111), buildings other than dwellings (AN.112), other structures (AN.1122) and land improvement (AN.1123). See Section 4.1.7 below.
- d) Roads and bridges are separated from other infrastructure. For the general government sector, the main data source PSFS offers detailed information in this regard. For the non-financial corporations sector (S.11), for 2007 and 2008, only data about transportation infrastructure in NACE Division 49 from SBS are available. For 2009 and beyond, figures are estimated on the basis of information from the year 2008. In Estonia, roads and bridges (including the railway) constitute 6.7% of the total gross capital stock. Therefore, railways, sewage systems and any other single public infrastructure are not separately identified. The consistency of the GFCF time series has been ensured for the early years.
- e) There are no detailed data on the components of other structures available. As no detailed information is available, a single average service life is used for all components of other structures. The lifetime of 55 years is used in the case of roads and bridges.
- f) The lifetime assumption was investigated in 2018. There is no detailed information available on the composition of other structures and land improvements.
- g) Bell-shaped retirement functions based on Weibull distribution are used for all assets. The simultaneous exit assumption has not been used.

The recommendations of the GNP Committee on Entertainment, Literary and Artistic Originals concerning CFC are applied. The geometric depreciation method with 5 years of service life is used. A detailed description of the measures taken to address all recommendations on originals is provided in Section 5.10 of the Inventory.

The following table describes the methodology of creating price indices used to deflate capital expenditure data:

Type of fixed assets	Price index	Comments
Buildings and structures	Construction price index, with additional costs included	It can be considered as an output index because in addition to the price changes of basic inputs (labour force, building materials and machines), which are taken into consideration in the common construction price index, also the changes of other costs and profit margins of construction enterprises are taken into account. Therefore, it expresses more realistically the changes of the market prices for subscribers (there is no own-account construction in the GG sector; services are purchased from construction enterprises). Since SE cannot calculate this index by type of building, the same index is applied to all buildings and structures.
Transport equipment	Import price indices at the level of 2-digit NACE codes	$0.8 * \text{Import price index} + 0.2 * \text{Producer price index of C.29}$
ICT equipment	USA's PPI of electronic computers and computer equipment, adjusted to take into account the effects of fluctuations in exchange rates	Since the USA is a substantial producer and exporter of computers and has relevant impact on the prices of the global sectorial market, the PPI of the USA is considered the most appropriate.
Other machinery and equipment	Import price indices at the level of 2-digit NACE codes	$0.8 * \text{Import price index} + 0.2 * \text{Producer price index of NACE08 C.26, 27, 28, 32}$
Weapons systems	Deflator of S.13 NACE O.84	
Other tangible fixed assets		
Cultivated biological resources	CFC for animals is not calculated, while it is computed for trees, crop and plant resources yielding repeat products.	The price index comes from agricultural statistics.
Land improvement	Construction price index	
Intangible fixed assets		
Computer software and databases	USA's PPI of software publishers, adjusted with exchange rate changes	Issued based on the same principles as those applied in the case of computers and computer systems.
Research & Development	Consumer price index for all services in the institutional sectors S.11, S.12, S.15. In sector S.13, the deflator of output is used.	
Artistic, literary and entertainment originals		The deflators of NACE J.58-59-60, R.90

4.12.4. Non-financial corporations (S.11)

The main data source SBS provides information about the stocks of fixed assets at the beginning and end of the year at historical cost in its Module H. In the case of non-financial and financial corporations, the oldest historical cost refers to 1 January 1993 when enterprises were reevaluating their assets. In doing that, guidelines for revaluation were not very strictly followed. Only three groups of assets were mentioned for which quite rough revaluation

coefficients were provided. Based on this regulation, each enterprise and institution had to fix their own coefficients and reevaluate their assets according to these.

The following table (Table 4.32) shows the service lives and other PIM parameters used in the non-financial corporations sector, by type of assets.

Table 4.32 PIM parameters used in non-financial corporations sector

Asset type	Service lives	Weibull alpha	Consumption rate
Dwellings (AN.111)	67/80	3.12/2.76	0.01
Buildings other than dwellings (AN.1121)	30–50	1.01–2.81	0.02–0.03
Roads and bridges (AN.11221)	55	2	0.02
Other structures (AN.11222)	35	2	0.03
Land improvements (AN.1123)	35	2	0.03
Cost of ownership transfer (AN.11231)	25	2	0.04–0.08
Transport equipment (AN.1131)	7–25	1.02–2.98	0.07–0.24
Computers (AN.11321)	5–11	1.01–2.97	0.15–0.33
ICT equipment (AN.11322)	5–25	1.01–2.97	0.07–0.33
Other machinery and equipment (AN.1139)	10–27	1.01–2.95	0.06–0.16
Animal resources yielding repeat products (AN.1151)	3–8	1.56–2.84	-
Tree, crop and plant resources yielding repeat products (AN.1152)	10	2	0.2
Research and development (AN.1171)	10	2	0.2
Mineral exploration (AN.1172)	35	2	0.03
Computer software and databases (AN.1173)	5	2	0.33–0.4
Entertainment, literary or artistic originals (AN.1174)	5	2	0.4

4.12.5. Financial corporations (S.12)

For financial corporations, the methodology for estimating the PIM parameters did not give realistic results. There are two main reasons for this. Firstly, the financial corporations sector is relatively small and the capital stocks are not large enough for estimating the PIM parameters. Secondly, the data on capital stocks for the financial corporations sector come from multiple sources and that may lead to discrepancies between the stocks calculated with PIM. As the estimations did not give usable results, the service lives based on the “best practice” service lives by OECD and the service lives used by Statistics Finland and the shape parameter $\alpha = 2$ (linearly increasing risk of discard) were chosen.

The PIM parameters for the financial corporations sector are presented in Table 4.33.

Table 4.33 PIM parameters used in financial corporations sector

Asset type	Service lives	Weibull alpha	Consumption rate
Buildings other than dwellings (AN.1121)	40	2	0.03
Cost of ownership transfer (AN.11231)	25	2	0.04
Transport equipment (AN.1131)	8	2	0.21
Computers (AN.11321)	5	2	0.33

ICT equipment (AN.11322)	5	2	0.33
Other machinery and equipment (AN.1139)	8	2	0.21
Animal resources yielding repeat products (AN.1151)	3	2	-
Research and development (AN.1171)	10	2	0.20
Computer software and databases (AN.1173)	5	2	0.40

4.12.6. General government (S.13)

The following table presents the PIM parameters used in the general government sector by type of assets.

Table 4.34 PIM parameters used in general government sector

Asset type	Service lives	Weibull alpha	Consumption rate
Dwellings (AN.111)	67/80	2	0.01
Buildings other than dwellings (AN.1121)	38–56	1.3–2.51	0.02
Roads and bridges (AN.11221)	55	1.26–2.41	0.02
Other structures (AN.11222)	30–47	1.05–2.91	0.02–0.03
Cost of ownership transfer (AN.11231)	25	2	0.08
Transport equipment (AN.1131)	5–25	1.11–2.61	0.0–0.33
Computers (AN.11321)	4–5	1.07–2.85	0.33–0.41
ICT equipment (AN.11322)	4–5	1.07–2.85	0.33–0.41
Other machinery and equipment (AN.1139)	6–16	1.03–2.92	0.10–0.28
Weapons systems (AN.114)	10	1.36–1.8	0.17
Animal resources yielding repeat products (AN.1151)	6	1.42	-
Tree, crop and plant resources yielding repeat products (AN.1152)	10	2	0.20
Research and development (AN.1171)	10	2	0.20
Mineral exploration (AN.1172)	44	2.91	0.02
Computer software and databases (AN.1173)	4–12	1.02–2.74	0.17–0.50
Entertainment, literary or artistic originals (AN.1174)	5	2	0.40

In Estonia, the Accounting Act sets a very wide range for depreciation rates which enterprises may use. Some recommendations exist for depreciation rates in government institutions.

In 2004, the Ministry of Finance issued a regulation that established the following ranges for depreciation rates:

- buildings: 2–5%;
- structures: 2.5–10%;
- machinery and equipment (including transport): 10–20%;
- computers: 33–50%;
- intangible fixed assets: 5–50%.

Despite these regulations, each institution may apply its own depreciation rates, and this makes it complicated to estimate the average depreciation rate for each particular asset type. Therefore, SE has taken into consideration the service lives applied in a number of OECD Member States (overview in the OECD report “Methods used by OECD countries to measure stocks of fixed

capital”, published in 1993). The OECD has compiled a “best-practice” table for service lives by type of asset and industry.

4.12.7. Households (S.14)

As there is no information on the stock of fixed assets other than dwellings for the households sector, the same PIM parameters were used as in the non-financial corporations sector. The parameters for the improved PIM for the households sector are presented in Table 4.35.

Table 4.35 PIM parameters used in households sector

Asset type	Service lives	Weibull alpha	Consumption rate
Dwellings (AN.111)	67/80	3.12/2.76	0.01
Buildings other than dwellings (AN.1121)	30–50	1.01–2.81	0.02–0.03
Roads and bridges (AN.11221)	55	2	0.02
Other structures (AN.11222)	35	2	0.03
Cost of ownership transfer (AN.11231)	25	2	0.04
Transport equipment (AN.1131)	7–16	1.05–2.98	0.10–0.24
Computers (AN.11321)	3–11	1.01–2.97	0.15–0.55
ICT equipment (AN.11322)	5–25	1.01–2.97	0.07–0.33
Other machinery and equipment (AN.1139)	7–27	1.01–2.95	0.06–0.25
Animal resources yielding repeat products (AN.1151)	3–8	2–2.84	-
Tree, crop and plant resources yielding repeat products (AN.1152)	10	2	0.20

CFC in the households sector consists mostly of dwellings. In 2021, the CFC of dwellings represented 82% of the total CFC of households.

For information on the methods for calculation of dwelling services, see Section 3.18.

The main data sources for the estimation of consumption of fixed capital and the net stock of dwellings include current housing statistics and price statistics data.

There was no need to adjust the area of the housing stock for 2021 because the 2021 Population and Housing Census was only based on data from registers – the Building Register, the Land Register. Data from these registers were also used to estimate annual investments in new construction, reconstruction and major repairs of dwellings for 2012–2021.

In 2021, due to new census data, there were changes in the capital stocks used for rent calculations. The capital stock for actual rents increased from 8.65% to 13.99% for apartments and from 2.81% to 7.2% for houses. For imputed rents, the capital stock decreased from 91.35% to 86.01% for apartments and from 97.19% to 92.8% for houses.

The data on annual investments in housing are taken from the Building Register. Investment data in the non-financial corporations sector come from the annual survey. Data on the investments by the general government come from PSFS; for households, the corresponding data come from the Building Register.

For the calculation of dwelling services and the CFC of dwellings by institutional sector, a distinction according to ownership is required. Therefore, distinct data sets for dwellings in the non-financial sector, government sector and households sector are outlined.

The distinction between owners and tenants is important to separate actual rents and the output of owner-occupied dwelling services; therefore, the capital stock and the consumption of fixed capital are calculated separately. Also, a distinction is made between houses and apartments because of their different average size, value per square metre and service lives: the service life for apartments is set at 67.7 years while the service life for houses is 80 years.

For estimates of the net stock and CFC of dwellings, 8 groups of dwellings are distinguished:

	Dwellings
Set 1	Government houses
Set 2	Government apartments
Set 3	Households' owner-occupied houses
Set 4	Households' owner-occupied apartments
Set 5	Households' rented houses
Set 6	Households' rented apartments
Set 7	Non-financial sector houses
Set 8	Non-financial sector apartments

The results of PHC 2021 are outlined above in Table 3.82 and Table 3.83.

Estimation of capital stock

The Task Force suggests three possible simplified methods (Method A, B and C) for estimating capital stock and the consumption of fixed capital. Method C is chosen by Estonia as an alternative methodology for dwellings, as it only requires unit data from a single recent census. However, the method assumes that data on dwelling units are available stratified by their year of construction (or age), so that, for example, data are available on all dwelling units in the stock of dwellings that are 0–10 years old, 11–20 years old, etc. Method C is probably more accurate than Method A or Method B, as it makes less use of simplifying assumptions. The procedure of estimations according to Method C is shown in Table 4.37.

Table 4.36 Method C for estimating initial value of net stock at constant prices

Item No	Description of item
KC1	Number of owner-occupied dwelling units in stock of year t that were constructed between year t-9 and year t
KC2	Index of average quality of dwelling units comprising KC1
KC3	Index of average quality of dwelling units in base year
KC4	Average annual rate of depreciation; estimated by CFC3 from table CFC
KC5	Contribution of dwelling units in KC1 to value of stock in year t; estimated by $((KC1 * KC2) / KC3) * (1 - KC4)^5$
KC6	Number of owner-occupied dwelling units in stock of year t that were constructed between year t-19 and year t-9
KC7	Index of average quality of dwelling units comprising KC6
KC8	Contribution of dwelling units in KC6 to value of stock in year t; estimated by $((KC6 * KC7) / KC3) * (1 - KC4)^{15}$
KC9	Number of owner-occupied dwelling units in stock of year t that were constructed between year t-29 and year t-19
KC10	Index of average quality of dwelling units comprising KC9
KC11	Contribution of dwelling units in KC9 to value of stock in year t; estimated by $((KC9 * KC10) / KC3) * (1 - KC4)^{25}$
.....	
KC(3m)	Number of owner-occupied dwelling units in stock of year t that were constructed between year t-((m-1)*10)-9 and year t-((m-1)*10)+1
KC(3m+1)	Index of average quality of dwelling units comprising KC(3m)
KC(3m+2)	Average age for last 10-year cohort; estimated by $10*m + 25$ if m is less than or equal to 6 and by $10*n + 15$ if m is greater than 6
KC(3m+3)	Contribution of dwelling units in KC(3m) to value of stock in year t; estimated by $((KC(3m) * KC(3m+1) / KC3) * (1 - KC4)^{KC(3m+2)})$
KC(3m+4)	Beginning-of-year value of net stock of owner-occupied dwellings in adjusted dwelling units for year t, estimated by $KC5 + KC8 + KC11 + \dots + KC(3m+3)$
KC(3m+5)	Value of dwelling unit in base year
KC(3m+6)	Beginning-of-year value of net stock of owner-occupied dwellings in constant prices for year t, estimated by $KC(3m+4) * KC(3m+5)$

KC1, KC{3m} The count of the number of units constructed between various years should come from the census rather than from construction data (m is the number of stock cohorts for which separate data are available).

KC2, KC{3m+1} The value of the index for the year for each stock cohort represents the cost of construction in the base year units of the same quality as those identical to the units in that cohort. Quality can be measured as a linear function of the various characteristics of the dwelling units, such as their size (in square metres), the number of indoor toilets, etc. The coefficients for each of the characteristics, consequently, represent the marginal cost of constructing the characteristic (or amenity) in the base year. As the Task Force suggests, the coefficients can be estimated on the basis of expert opinion or from the use of statistical techniques, such as the hedonic regression equation, applied to micro data on the costs of constructing individual units.

KC3 If the quality index has already been normalised, the index should have a value of 1.0 for units constructed in the base year.

This estimation was first applied in the 2011 calculations. The value of a new dwelling unit is calculated separately for houses and apartments. The construction cost per square metre is based on official price statistics and professional construction data. These costs refer only to construction works and exclude the value of land. The average size is 109 m² for houses and 52 m² for apartments (according to PHC 2011).

Quality indicators of the dwelling stock are derived from census data on amenities. They are expressed as a linear function of dwelling characteristics (e.g. size, availability of heating, water supply, sanitation). Coefficients may be determined by expert assessment or statistical methods such as hedonic regression equation.

For houses, the quality indicator includes:

- average size;
- central or electrical heating (or both);
- water supply;
- washing facilities (bath or shower);
- flush toilet.

For apartments, the quality indicator includes:

- average size;
- central or electrical heating;
- water supply;
- washing facilities (bath or shower).

The “average size” criterion reflects differences between dwellings built in the benchmark year and those of earlier cohorts. Electrical heating is included, as it is widely used in Estonia and provides the same level of comfort as central heating.

There was no need to adjust the housing net stock for 2021 because the 2021 Population and Housing Census was only based on data from registers – the Building Register, the Land Register. Data from these registers were also used to estimate annual investments in new construction, reconstruction and major repairs of dwellings for 2012–2021.

4.12.8. NPISH sector (S.15)

The service lives, depreciation rates and discard rates used as PIM parameters in the NPISH sector are presented in Table 4.38 below.

Table 4.37 PIM parameters used in the NPISH sector

Assets	Service lives	Weibull alpha	Consumption rate
Buildings other than dwellings (AN.1121)	36–50	1.22–2	0.02–0.03
Land improvements (AN.1123)	70	2	0.01
Cost of ownership transfer (AN.11231)	25	2	0.04
Transport equipment (AN.1131)	8	1.22–2	0.21
Computers (AN.11321)	5	2	0.33
ICT equipment (AN.11322)	10–15	2	0.11–0.17
Other machinery and equipment (AN.1139)	7–17	1.15–2	0.10–0.24
Animal resources yielding repeat products (AN.1151)	3	2	-
Research and development (AN.1171)	10	2	0.20
Computer software and databases (AN.1173)	4–7	1.81–2.76	0.24–0.41

Chapter 5. Expenditure approach

5.0. GDP according to the expenditure approach

The expenditure measure of GDP is the sum of the components of household final consumption expenditure, final consumption expenditure of the general government and NPISH sectors, gross fixed capital formation, changes in inventories, and net exports of goods and services.

Table 5.1 shows the breakdown of GDP in 2021 by component according to the expenditure approach.

Table 5.1 GDP by expenditure approach, 2021
(million euros)

Component	Value	% of GDP
Total final consumption expenditure	22,109.24	70.3
..Household final consumption expenditure	15,305.06	48.7
..NPISH final consumption expenditure	538.29	1.7
..General government consumption expenditure	6,265.90	19.9
Gross capital formation	9,734.12	30.9
..Gross fixed capital formation	9,430.43	30.0
..Changes in inventories	218.92	0.7
..Acquisitions less disposals of valuables	84.77	0.3
Exports of goods and services	25,041.84	79.6
Imports of goods and services (-)	25,431.89	80.9
GDP at market prices by expenditure approach	31,453.31	100.0
Statistical discrepancy	0.0	0.0
GDP at market prices	31,453.31	100.0

It should be noted that the direct impact of the transaction-specific reservation on the components of GDP was not balanced in the supply and use framework; therefore, statistical discrepancy is shown on the expenditure side of GDP. This is due to the SUT being completed before the reservations could be fully addressed. As the balancing process of the SUT already indirectly introduced the impact of reservations into some of the components, the appropriate adjustments in other components created the statistical discrepancy. Statistics Estonia does not adjust the statistical discrepancy through the balancing process outside of the SUT framework.

5.1. Reference framework

In the following, the main sources used for each expenditure component are listed.

Household final consumption expenditure (HFCE) comprises the largest part of final consumption expenditures (48.7%). The main source for HFCE estimates is the Household Budget Survey (HBS). Data about the sales of goods and services are derived from the SBS and administrative sources (Public Sector Financial Statements, or PSFS). Also, information received from big suppliers is used (about water and electricity consumption, telecommunication services etc.). Data on the expenditures of non-residents in Estonia and residents abroad are obtained from the Balance of Payments (BOP), which uses the results from the Foreign Visitors Survey for non-residents and the Tourism Survey for residents (carried out by SE). For a more detailed description, see Chapter 10.

Government final consumption expenditure (GFCE) is estimated on the basis of total output value, from which own-account capital formation and income from the sales of goods and services are excluded and social transfers in kind of market goods and services are added. The main source is PSFS. For more information, see Chapter 10.

The final consumption expenditure of the NPISH sector is derived as output (the sum of intermediate consumption, compensation of employees, consumption of fixed capital and other taxes on production) minus market sales, production of research and development for own final use, own account software and income in kind (fringe benefits) plus humanitarian goods. The annual statistical survey “Non-profit organisations” is the main source for the final consumption expenditure of NPISH. For more information, see Chapter 10.

GFCF (acquisitions less disposals of fixed assets and intangible fixed assets, improvements to non-produced non-financial assets and transfer costs by resident producers) is estimated using information about the purchases of capital goods. SBS, annual data of agricultural, hunting, forestry and fishing enterprises, PSFS and the survey of non-profit institutions are the main sources for GFCF. For more information, see the detailed description in Chapter 10.

Changes in inventories cover the value of additions to and withdrawals from inventories (including “normal” losses) in accordance with ESA 2010. For changes in inventories, SBS and PSFS are the main data sources. See the detailed description in Chapter 10.

The main data sources for the export and import of goods and services include the BOP (prepared by Eesti Pank) and foreign trade statistics. See the detailed description in Chapter 10.

5.2. Borderline cases

5.2.1. Borderline cases for HFCE

HFCE includes the following borderline cases:

- a) dwelling services produced by owner-occupiers;

For dwelling services produced by owner-occupiers, separate calculations are made on the production side. See the detailed description in Section 3.18.2.2.

- b) income in kind, such as:

- goods and services received as income in kind by employees. For goods and services received as income in kind by employees, the HBS data and the Tax and Customs Board’s information about fringe benefits granted to employees are the main data sources used. A detailed description of income in kind is provided in Chapter 7;
- goods or services produced as outputs of unincorporated enterprises owned by households that are retained for consumption by members of the household (e.g. food and other agricultural goods, household services produced by employing staff);
- estimates about households’ own production are obtained from the production approach calculations for the households sector. The same estimates are included in the production and in the expenditure approach. A detailed description of own production (e.g. food and other agricultural goods) is provided in Section 3.7.

c) items not treated as intermediate consumption, such as:

- materials for small repairs to and interior decoration of dwellings of a kind carried out by tenants as well as owners. These expenditures are part of the individual consumption expenditure of households. The estimates are based on the HBS data.
- materials for repairs to and maintenance of consumer durables. These expenditures are based on the HBS data.

d) the value of any goods purchased under hire-purchase agreements;

Goods purchased by households under hire-purchase agreements are recorded with the full value of the goods. SBS is the main data source for the HFCE of semi-durable and durable goods. As SBS covers the total value of purchases on credit when the goods are delivered (as needed for the NA), it is considered that HFCE covers the total value of purchases on credit.

The second important data source, the HBS, does not correctly cover hire-purchases as households record only their payments, not the whole value. However, HFCE estimates based on SBS and estimates based on the HBS are continuously compared and corrections are made if necessary.

e) purchases and sales of second-hand goods included in the estimates (see §§ 3.180–3.183 of ESA 2010);

Purchases and sales of second-hand goods are fully covered by the HBS data, and these data are included in HFCE estimates in line with ESA 2010. If these purchases are made via the retail trade system, they are covered in SBS. However, SBS does not include information about the purchases of second-hand goods made outside the retail trade system. To compensate for possible incomplete coverage, the HBS and SBS data are compared constantly. For second-hand cars, the estimation is made using different transport statistics (see Section 0).

f) FISIM used for final consumption purposes by households;

FISIM on the loans and deposits of households as consumers is allocated to household final consumption expenditure.

g) insurance services by the amount of the implicit service charge;

Insurance services provided are calculated in accordance with ESA 2010 concepts. The output is allocated between different sub-sectors on the basis of gross premiums taken from the survey of insurance corporations.

h) direct payments from insurer to repairer and other service providers, if relevant;

Direct insurance payments appear in insurance connected with dwellings, health, transport, etc. A survey on insurance services is the data source used here. Currently, no information on the value of claims paid directly is available from this survey. It is planned to include questions on this in the survey of insurance companies.

i) the amount of car registration taxes as part of taxes on products;

In Estonia, car registration tax is treated as a tax on products and included in the HFCE. Car registration taxes are covered in the HBS. Also, information from the PSFS is available. Car registration taxes in the government finance statistics are calculated based on the number of vehicles registered for the first time and based on the relevant state fee during the accounting period. Detailed information is provided in Section 3.28.

j) pension funding services by the amount of the implicit service charge;

Information about pension funding services for households is received directly from the survey of pension funds.

- k) payments by households for licenses, permits, etc. that are regarded as purchases of services (see §§ 4.79 and 4.80 of ESA 2010).

A borderline is defined between taxes and services provided to households by the general government. Car registration tax is treated as a tax on products and is included in HFCE. Stamp taxes or state fees on legal documents paid by households are treated as purchases of services from the government and are completely included in HFCE (stamp taxes for driving licenses are covered in COICOP group 07.2.4; stamp taxes for passports, identification documents and other administrative and legal documents are covered in COICOP group 12.7). The data are based on the information derived from the PSFS system.

The following borderline cases are excluded from HFCE:

- a) Social transfers in kind. Goods and services purchased by the general government from market producers and supplied to households are classified as the final consumption expenditure of the government (as social transfers in kind). The corresponding information is derived from the PSFS system. A more detailed description is provided in Section 5.9.
- b) All those payments by households regarded as taxes (see § 4.79 and § 4.80 of ESA 2010). For example, the animal husbandry tax.
- c) Subscriptions, contributions and dues paid by households to NPISH, voluntary transfers in cash or in kind by households to charities etc. (see §§ 4.125–4.126 of ESA 2010). Subscriptions, contributions and dues paid by households to NPISH such as trade unions, professional societies, consumers' associations, churches and social, cultural, recreational and sports clubs are classified as income transfers. Voluntary transfers in cash or in kind by households to charities are not classified as HFCE.
- d) An expenditure that an owner-occupier incurs on the decoration, maintenance and repair of the dwelling not typically carried out by tenants. These expenditures are classified as the intermediate consumption of dwelling services and not as HFCE.

5.2.2. Borderline cases for GFCF

GFCF includes the following borderline cases (see ESA 2010 § 3.129):

- a) R&D (with the exception of R&D acquired to be used solely in the creation of further products of R&D);

R&D as GFCF consists of own-account R&D and R&D purchased as intermediate consumption. Data for own-account R&D are estimated according to the "Manual on Research and Development" and based on the R&D expenditure data from the Research and Development Survey, which covers all sectors except the household sector (S.14). No R&D is estimated for households.

- b) structures and equipment used by the military;

Structures and equipment used by the military are estimated on the basis of PSFS, which provides sufficiently detailed information. According to ESA 2010, all facilities and equipment

used by the army (for civil or military purposes) are recorded under GFCF (P.51), as these are used for the continuous production of defence services, even in peacetime, with a deterrence function. Until 2021, single-use weapons, such as ammunition, missiles, bombs, and military resources, are classified under intermediate consumption (P. 2), and starting from 2022 as inventories (P.52)

Starting from 2016 and until 2022, the threshold for the capitalisation of tangible and intangible assets was 5,000 euros (VAT excluded), with the exception of land that is capitalised without any limit to its cost. General Government Accounting account group 1553 “Defence assets” shows assets belonging to the units of the Ministry of the Interior and units of the Estonian Defence League, to be used exclusively for military purposes. This account covers defence fixed assets that are continuously used and includes expenditure on two asset categories: AN.112 Buildings and structures for military purposes and AN.114 Weapons systems. The detailed information comes from import data. Account 1553 “Defence assets” excludes purchases of military single-use items such as ammunition, missiles, rockets and bombs.

Assets that can be used for civil purposes as well as for military purposes (airports, ports, schools, hospitals, vehicles) are reported in the accounts of different assets.

- c) military single-use items are treated as intermediate consumption. In the PSFS, purchases of military single-use items are recorded separately under the operating expenses account 553100 “Munitions, rockets and mines”;

Light weapons and armoured vehicles used by non-military units (e.g. Police and Border Guard Board) are considered as GFCF (P.51). Estimates are based on the information of PSFS.

- d) mineral exploration and evaluation;

With the development of the 1993 SNA, mineral exploration was introduced as a new category of produced assets. Mineral exploration and evaluation is undertaken by both enterprises specialising in this activity and on own account by enterprises whose principal activity is mineral extraction.

Mineral exploration is recorded as GFCF. For more information, see Section 5.10.3.15.

- e) computer software and databases;

Computer software and databases are investigated separately only in the general government sector (PSFS is the main data source), while other institutional sectors (S.11 and S.12) report software and databases (AN.1173) without ulterior division. For further information, see Section 5.10.3.16.

- f) entertainment, literary or artistic originals;

Entertainment, literary or artistic originals are investigated separately, and these expenditures are included in GFCF. A more detailed description is provided in Section 5.10.3.17.

- g) other intellectual property rights;

The category of “Other intellectual property products” includes any product that constitutes a fixed asset but is not captured in one of the specific items (such as brand equity, architectural

and engineering designs, etc.). The analysis and consultations with colleagues dealing with business statistics show that there are no such kind of assets in Estonia.

h) changes in livestock used in production year after year;

Information about changes in livestock used in production year after year is derived from the annual data of agricultural, hunting, forestry and fishing enterprises and used in the calculations of GFCF.

i) changes in trees that are cultivated year after year;

Information about changes in trees that are cultivated year after year is derived from the annual data of agricultural, hunting, forestry and fishing enterprises and used in the calculations of GFCF.

j) improvements to existing fixed assets beyond ordinary maintenance and repairs;

The main data sources used to calculate GFCF offer a necessary breakdown to derive information about improvements to existing fixed assets beyond ordinary maintenance and repairs. For more detailed information, see Section 5.10.

k) the acquisition of fixed assets by financial leasing;

Information about the acquisition of fixed assets by financial leasing is derived from the main data sources (PSFS and SBS), while information on new leasing activities related to the goods listed below is received from Eesti Pank:

- construction machinery;
- special cars;
- trailers;
- IT equipment
- cargo handling equipment;
- vans;
- vessels;
- buses;
- medical equipment;
- forestry equipment;
- other;
- other machinery and equipment;
- other small vehicles;
- agricultural machinery;
- coaches;
- cars;
- commercial vehicles;
- production equipment;
- rolling stock (locomotives and wagons);
- trucks;
- minibuses.

l) terminal costs, i.e. large costs associated with disposal;

Terminal costs are recorded as GFCF at the end of the assets' service life. In Estonia, three different types of terminal costs can be identified: the closing of mines, clean-up of landfills

and large single decommissioning projects, such as the closing of Kohtla-Järve and Kiviõli semi-coke hills. These costs are covered by either targeted funding (from the budget of local governments or the state, from the funds of the European Union) or enterprises' own funds.

m) the amount of car registration taxes as part of the taxes on products.

The amount of car registration taxes as part of the taxes on products is derived from the production side. For a detailed description, see Section 3.28.

n) renewable energy installations

See Section 2.2.2.

The following borderline cases are excluded from GFCF:

a) transactions included in intermediate consumption, e.g.:

- the purchase of small tools for production purposes;

As required by § 3.130 of ESA 2010, the purchase of small tools is not included in GFCF calculation. In the main data sources, these transactions are reported as current spending and considered as intermediate consumption; therefore, they are not taken into account in the compilation of GFCF estimates.

- ordinary maintenance and repairs;

The main data sources offer information about ordinary maintenance and repairs costs; therefore, they are excluded from the calculation of GFCF and are included in intermediate consumption.

- the acquisition of fixed assets to be used under an operational leasing contract;

In the case of operating leases and resource leases, there is no change of ownership, and the legal owner continues to be the owner. Resource leases are used for natural resources, such as land and radio spectra. Operating leases are used for all other non-financial assets (§ 15.04 of ESA 2010). In cases where there is no transfer of ownership, the purchase of licenses and patents is recorded as intermediate consumption. This information is derived from the SBS survey.

b) transactions recorded as changes in inventories (animals raised for slaughter, trees grown for timber);

Transactions recorded as changes in inventories in the agricultural sector are reported in the SBS survey and the annual survey of agricultural, hunting, forestry and fishing enterprises under "Changes in inventories, including work-in-progress" and "Changes in inventories of finished goods". Consequently, these transactions are not included in the calculation of GFCF;

c) catastrophic losses on fixed assets;

Catastrophic losses on fixed assets, such as the destruction of cultivated assets and livestock by outbreaks of disease, usually not covered by insurance, or other damages are excluded from the calculation of GFCF, as these unexpected changes are already taken into account in the computation of agricultural production.

d) machinery and equipment acquired by households for the purposes of final consumption.

Final consumption expenditures of machinery and equipment acquired by households are excluded from GFCF. The HBS and SBS are the main data sources for HFCE.

Distinctions between HFCE and intermediate consumption or GFCF of unincorporated enterprises

The distinction between HFCE, intermediate consumption and GFCF is made according to the purpose of the expenditures and by using different data sources. Expenditures by households on durable goods, such as vehicles, furniture and electrical equipment, for business purposes are allocated to GFCF. Non-durables such as fuel are allocated to intermediate consumption (according to the administrative data from the Tax and Customs Board) and final consumption to household final consumption (according to HBS and SBS). The final results are compared and corrections are made if necessary.

Intangible fixed assets are treated as GFCF and not as intermediate consumption. The data sources offer the necessary granularity. ESA 2010 recognises expenditures on both purchased and own-account R&D as a fixed investment and the depreciation of these assets as the consumption of fixed capital. So, in line with this requirement, intangible fixed assets are reported as investments and, therefore, these do not appear among intermediate consumption.

5.3. Valuation

Expenditure components are valued at purchaser's prices for purchased products and at basic prices for own-produced products.

The valuation of HFCE estimates at purchaser's prices is in line with ESA 2010. In Estonia, HFCE estimates based on the HBS are recorded at purchaser's prices, including non-deductible VAT. Retail sales data and data on the sales of services from the SBS survey do not include VAT, which is subsequently added by the NA team. Households' own-account production of goods is valued at basic prices. Wages and salaries in kind are estimated at purchaser's prices in the case of goods and services financed by the employer and provided to employees.

Acquisitions of tangible assets are valued at purchaser's prices, including installation charges and other costs of ownership transfer. This requirement is in accordance with § 16.15 of the International Accounting Standards. Own-account produced assets are valued at the basic prices of similar fixed assets, and if such prices are not available, at the costs of production plus a mark-up (except for non-market producers) for net operating surplus or mixed income. Investments are recorded according to the date of the transfer of assets.

The purchasing of goods and services is recorded in the PSFS system without VAT. The corresponding VAT values (excluding deductible tax) are recorded in the system on separate accounts 601000 and 601002. To follow ESA 2010 rules and estimate transactions P.2, P.5 and D.632 at purchaser's prices, a special process developed by Statistics Estonia is used to allocate VAT amounts back to the transactions. Depending on the kind of expenditure, the VAT rate in 2021 was 20%, 9% or 0%.

For the NPISH sector, expenditures are valued at purchaser's prices. For further information, see Section 5.8.

Inventories are valued at purchaser's prices for purchased products and at basic prices for own-produced products. See Section 5.11 for more information on how changes in inventories are valued.

GFCF is valued at purchaser's prices, including installation charges and other costs of ownership transfer. The acquisitions of tangible assets are valued at purchaser's prices, including installation charges and other costs of ownership transfer. Disposals are valued at basic prices after deducting the costs of ownership transfer. There is no need for any adjustments to the source data, because according to the Estonian accounting legislation all acquired fixed assets have to be recorded at the purchaser's price, which consists of the value of assets and all costs that allow the enterprise to start using this asset (installation charges and costs of transfer).

The exports of goods are recorded at FOB value, which is equivalent to the purchaser's price, while the imports of goods in the supply table are valued at CIF, which corresponds to the basic price.

The valuation of income in kind and own-account production is at the basic prices of similar fixed assets.

- a) Goods and services given to employees as wages and salaries in kind are valued at basic prices when produced by the employer and at purchaser's prices when purchased by the employer. Detailed information is provided in Chapter 7.
- b) Goods or services retained for own consumption are valued at basic prices.

A detailed description is provided in Section 3.7. and in Chapter 7.

GFCF produced on own-account is valued at the basic prices of similar fixed assets. If such prices are not available, GFCF produced on own-account is valued at the costs of production plus a mark-up (except for non-market producers) for net operating surplus or mixed income. In the business accounts, own-account production is recorded at production cost.

In Estonia, four types of fixed assets are considered to be produced on own-account: construction, software, mineral exploration, and research and development.

Acquisitions of intellectual property products are valued as required in § 3.136 of ESA 2010:

- Mineral exploration is valued at the costs of actual test drillings and borings, and the costs incurred to make it possible to carry out tests, such as aerial or other surveys.
- Computer software is valued at purchaser's prices if purchased on the market. For market producers, own-produced software is estimated at the basic price. If no basic price is available, own-produced software is estimated at its costs of production plus a mark-up for net operating surplus.
- Entertainment, literary or artistic originals are valued at the price paid by the purchaser when it is sold. If it is not sold, the following method of estimation is used: the sum of its production costs plus a mark-up (except for non-market producers) for net operating surplus. See the detailed description provided in Section 5.10.

Disposals are valued at basic prices after deducting the costs of ownership transfer. There is no need for any adjustments of the source data, because according to the Estonian accounting legislation all acquired fixed assets have to be recorded at the purchaser's price, which consists of the value of assets and all costs that allow the enterprise to start using this asset (installation, costs of transfer).

Concerning the valuation of changes in inventories, refer to Section 5.11 for a more detailed description.

According to § 3.168 of ESA 2010, the exports and imports of goods should be valued free on board (FOB) at the border of the exporting country. FOB prices include the goods at basic prices, plus related transport and distributive services and any taxes less subsidies on the goods traded. For the exports of goods, the information provided by the Foreign Trade Team is measured in FOB prices and is compliant with ESA 2010 definitions. However, the imports of goods are recorded at cost-insurance-freight (CIF) prices by the Foreign Trade Team and thus need to be corrected for the additional delivery costs to the importing country's border.

The exports of services are valued at basic prices and the imports of services at purchaser's prices. Based on Statistics Estonia's Intrastat Manual, the price of a transaction between associated persons must be in line with the price of a similar transaction on similar terms between non-associated persons. If the transfer price does not correspond to the market price, the market value of the transaction should be recorded in Intrastat, not the transfer price.

Sources of data on all expenditure components, recorded on an accrual basis (in line with §§ 1.101–1.105 of ESA 2010).

For HFCE, the HBS and SBS are the main data sources used. Therefore, HFCE estimates are recorded on an accrual basis in line with ESA 2010. No adjustments are needed.

For the general government sector, the PSFS system provides the data on an accrual basis. No adjustments are needed.

For the NPISH sector, the data modelled based on annual reports and the special survey of non-profit organisations are presented on an accrual basis. No adjustments are needed.

For GFCF, the data sources used (SBS survey, PSFS system, non-profit organisations survey and the annual data of agricultural, hunting, forestry and fishing enterprises) provide the data on an accrual basis. No adjustments are needed.

For exports and imports, foreign trade data and BOP are collected on an accrual basis and no adjustments are needed.

For the changes in inventories, data are collected based on the same principles as laid down in accounting principles. Thus, no adjustments are needed.

5.4. Transition from private accounting and administrative concepts to ESA 2010 national accounts concepts

In order to calculate estimates according to the requirements of ESA 2010, SE makes a number of adjustments to business statistics and administrative sources for differences in definitions,

valuation, recording treatment and exhaustiveness. On the expenditure side, the following adjustments are made:

- a) durable goods of small value;

For durable goods, the Estonian accounting legislation considers commodities with an economic life of at least one year as fixed assets. In the law, no threshold is specified for the minimum value of those commodities. According to ESA 2010 concepts, purchases of small tools for production purposes are recorded as intermediate consumption. For more information, see Section 3.4.

- b) major repairs and renovations;

The Estonian accounting legislation enforces that expenses that substantially extend the working life, increase the performance and capacity of an asset, increase the quality of production or decrease the expenses of production should be treated as expenses on reconstruction, as they increase the purchaser's price of an asset. This statement is generally in line with NA requirements and no adjustments need to be made to the business accounts. For more information, see Section 3.4.

- c) valuation of inventories;

Inventories of materials are valued at purchaser's prices. The valuation of stocks in source statistics is in line with ESA 2010 requirements for materials and merchandise inventories. However, adjustments are made to eliminate holding gains. For a more detailed description, refer to Section 5.11.

- d) software and databases and entertainment, literary and artistic originals;

According to the Estonian accounting legislation, software could be classified either as tangible or intangible fixed assets. If it is purchased inseparably from hardware, it is classified as a tangible asset in the business accounts. If the use of the software is independent from hardware, the former is classified as an intangible fixed asset. Entertainment, literary and artistic originals misreported as intermediate consumption are included in GFCF. For a more detailed description, refer to Chapter 5.10.

- e) research and development;

Under the ESA 2010 definition, the purchases of R&D services by all activities (except for NACE 72, where they are to be considered as sub-contracting) are recorded as GFCF. For more information, see Section 3.4.

- f) insurance service charge;

Insurance services are estimated using the service charge concept. For more information, see Section 3.4.

- g) allocation of FISIM;

Eesti Pank collects data on commercial banks and large leasing companies through a survey. Statistics Estonia receives data from Eesti Pank in a format which meets the national accounting concepts of ESA 2010. Statistics Estonia uses administrative data of other financial intermediaries (S.125) coming from the Business Register (financial statements). The data

consistent with ESA 2010 concepts are taken from this source for FISIM calculation. FISIM is allocated to the users. For more information, see Section 3.17.

h) leasing;

Estonian accounting legislation regulating the accounting principles for capital and operating leasing is in compliance with ESA 2010 requirements. Financial leasing is recorded as part of GFCF. For more information, see Section 3.4.

i) consumption of margins on trading financial assets;

Margins on trading financial assets are recorded in the service fees of financial services. For more information, see Section 3.4.

Next, the treatment of income in kind and tips is outlined.

Estimates for wages and salaries in kind are taken into account as part of HFCE. The HBS data and administrative data from the Tax and Customs Board are the main data sources used. For the general government, wages and salaries in kind are directly estimated on the basis of data from the PSFS system. No adjustments are needed. For a detailed description, see Chapter 7.

Expenditures on tips made in hotels, restaurants and taxis are recorded as part of HFCE. The estimates are taken directly from the production side. For more information, see Section 7.1.3.5.2.

Table 5.2 shows the size of the various conceptual adjustments.

Table 5.2 Conceptual adjustments by expenditure component, 2021
(million euros)

Component	Allocation of FISIM	Allocation of insurance	Other conceptual adjustments	Total conceptual adjustments
Total final consumption expenditure	362.3	99.3	-9,995.7	-9,534.1
..Household final consumption expenditure	349.4	94.9	-9,965.9	-9,521.6
..NPISH final consumption expenditure	0.9	0.2		1.0
..General government consumption expenditure	12.0	4.3	-29.7	-13.5
Gross capital formation			728.9	728.9
..Gross fixed capital formation			1,225.4	1,225.4
..Changes in inventories			-496.5	-496.5
..Acquisitions less disposals of valuables				
Exports of goods and services				
Imports of goods and services				
Total	362.3	99.3	-9,266.8	-8,805.2

5.5. Roles of direct and indirect estimation methods and of benchmarks and extrapolations

Direct estimation methods are defined as methods based on sources that give a direct value for the variable to be estimated. Indirect estimation methods are used in the absence of such a direct value and may comprise models, use of ratios, etc.

At present, direct estimation methods dominate in the expenditure approach. Direct methods (e.g. based on direct data sources) are used in most cases for estimating, for example, the final consumption expenditures of NPISH, government final consumption expenditures, acquisitions less disposals of valuables, changes in inventories, and exports and imports of goods and services.

In HFCE calculations, the following estimates are considered to be direct: HFCE estimates based on HBS outcome, SBS data with small adjustments for IC, PSFS data, BOP data, etc. For a more detailed description of different data sources, see Section 5.7.2 and Chapter 10.

The estimates of gross capital formation for all sectors are based on direct surveys, except for the households sector where extrapolation methods using information from the SBS survey are used.

Indirect methods are used for the calculations of own-account production of households. Estimates of the production of agricultural products, fuel wood and fishing for own final use and own-account construction and capital repair of dwellings by households are made by NA experts based on the HBS data, other sources and commodity flow method. In addition, indirect estimation methods are used in NA estimates for deriving data on motor vehicles purchased by households.

Table 5.3 shows the estimation methods used for each component.

Table 5.3 Estimation methods used by expenditure component, 2021

Component	Surveys and censuses	Administrative records	Combined data	Benchmark extra-polations	Commodity flow model	CFC (PIM)	Dwellings - stratification method	FISIM	Insurance	Other extra-polations and models	Other sources
Household final consumption expenditure	X	X		X	X					X	
NPISH final consumption expenditure	X	X	X			X					
General government consumption expenditure		X				X					
Gross fixed capital formation	X	X	X	X						X	
Changes in inventories		X	X								
Acquisitions less disposals of valuables	X	X	X								
Exports of goods and services	X	X						X	X	X	
Imports of goods and services	X	X						X	X	X	

The main surveys used include the SBS survey, the HBS, the survey on the annual data of agricultural, hunting, forestry and fishing enterprises, the survey of NPISH, Intrastat survey and BOP. However, in 2021, the HBS was not conducted, and therefore HBS data derived using regression models were used instead. For more information, see Chapter 10. Additionally, all expenditure components use information from administrative records: the PSFS system and Tax and Customs Board data. A detailed description of the data sources used is provided in Chapter 10. For households, NPISH and general government final consumption expenditures, the FISIM component is covered under conceptual adjustments.

In the expenditure approach, CFC calculations are based on the PIM model. For more information, see Section 4.12.

HFCE estimates of restaurants and hotels are covered under the commodity flow model. For more information, see Sections 5.7.2.3, 5.7.2.5 and 5.7.3.11. Other extrapolations and models cover several adjustments made in HFCE calculation, such as population adjustments, adjustments for purchases and sales outside the retail trade (RT) system, consumption of occasional and temporary activities, intentionally non-registered units and sole proprietorships. For more information, see Sections 5.7.2.1, 5.7.2.2 and 5.7.2.3. Moreover, the method covers households estimates for maintenance and repair of the dwelling (see Section 5.7.3.4) and estimate of motor cars (see Section 5.7.3.7).

5.6. Main approaches taken with respect to exhaustiveness

Explicit exhaustiveness adjustments in HFCE cover income in kind, tips, own consumption and illegal activities. For the exports and imports of goods, explicit exhaustiveness adjustments are made for the smuggling of tobacco, and drugs. For a detailed description, see Chapter 7.

Next, a summary table is provided showing the size of the various exhaustiveness adjustments in a breakdown by expenditure components and types of non-exhaustiveness (N1–N7).

Table 5.4 Exhaustiveness adjustments by expenditure component, 2021
(million euros)

Component	Total	Type of non-exhaustiveness						
		N1	N2	N3	N4	N5	N6	N7
Total final consumption expenditure	72.4		121.6	45.4				-94.5
..Household final consumption expenditure	318.8		121.6	45.4				151.9
..NPISH final consumption expenditure	-3.2							-3.2
..General government consumption expenditure	-243.1							-243.1
Gross capital formation	453.3							453.3
..Gross fixed capital formation	453.3							453.3
..Changes in inventories								
..Acquisitions less disposals of valuables								
Exports of goods and services								
Imports of goods and services	30.5		30.5					
Total	495.3		91.2	45.4				358.8

No explicit exhaustiveness adjustments are made for changes in inventories, acquisitions less disposals of valuables, exports of goods and services and general government consumption expenditure. For general government consumption expenditure, only adjustments for income in kind are made.

Explicit exhaustiveness adjustments in HFCE cover income in kind, tips, own produced goods and illegal activities.

For the final consumption expenditure of NPISH, exhaustiveness adjustments cover goods and services supplied as employee compensation in kind, R&D for own final use and own account software.

For GFCF, exhaustiveness adjustments cover own-account produced products, such as own-account produced software, own-account research and development and own-account construction.

For imports of goods and services, explicit exhaustiveness adjustments are made for illegal activities.

A detailed description is provided in Sections 5.7–5.16 and in Chapter 7.

5.7. Household final consumption expenditure (HFCE)

5.7.1. Overview

HFCE comprises the largest part (48.7% of the GDP in 2021) of final consumption expenditures. Table 5.5 provides an overview of HFCE estimates and the main data sources by COICOP 1999 divisions.

Table 5.5 HFCE results and the main source by COICOP item, 2021
(million euros)

COICOP item	Final estimate	Sources and estimation methods
01 - Food and non-alcoholic beverages	2,944.2	HBS – surveys and censuses, other E&M
02 - Alcoholic beverages, tobacco and narcotics	1,143.0	SBS – surveys and censuses, other E&M
03 - Clothing and footwear	917.6	SBS – surveys and censuses, other E&M
04 - Housing, water, electricity, gas and other fuels	3,390.0	Environment statistics, energy statistics, NA special estimates – surveys and censuses, other E&M, benchmark extrapolations
05 - Furnishings, household equipment and routine household maintenance	758.4	SBS, HBS – surveys and censuses, other E&M
06 - Health	565.8	SBS, HBS – surveys and censuses, other E&M
07 - Transport	1,543.7	SBS, HBS – surveys and censuses, other E&M
08 - Communication	413.7	SBS – surveys and censuses, other E&M
09 - Recreation and culture	1,328.3	SBS, HBS – surveys and censuses, other E&M
10 - Education	60.8	HBS – surveys and censuses, other E&M
11 - Restaurants and hotels	838.6	NA special estimates – commodity flow model
12 - Miscellaneous goods and services	1,395.7	SBS, HBS, insurance statistics, financial statistics – surveys and censuses, other E&M

Transition to national concept	5.4	BOP by Eesti Pank – surveys and censuses
Total HFCE	15,305.1	

5.7.2. Main data sources and their conversion to national accounts results

The main sources for HFCE estimates include the HBS, information about the sales of goods and services from the SBS survey, administrative sources (PSFS) and information from big suppliers (about water and electricity consumption, telecommunication services etc.). However, in 2021, the HBS was not conducted, and therefore HBS data derived using regression models were used instead. For more information, see Chapter 10. Data on the expenditures of non-residents in Estonia and residents abroad are obtained from the BOP, which uses the results from the Foreign Visitors Survey for non-residents and the Tourism Survey for residents (carried out by SE).

The data of HFCE, based on different sources, are reconciled using the commodity flow method.

Annual HFCE data are calculated at the 4-digit level of COICOP. In most cases, at least two independent estimates are obtained for each COICOP group. In many cases, there are three estimates from which the best estimate is chosen. Deciding the best estimate for each item is a relatively complicated procedure. Detailed information is provided in Section 5.7.3.

In this inventory, HFCE is described according to COICOP 1999, as detailed calculations for 2021 were still made based on this classification. The implementation of the new COICOP 2018 in HFCE was done using the correspondence table between the old and new classifications.

In general, the best estimate for food, non-alcoholic beverages and different services is derived from HBS-based calculations. RT is used as the best source to estimate purchases of different goods. Results based on other sources are considered to be the best estimate in the case of special estimates (e.g. rentals, purchase of passenger cars) or data from the SBS survey (except retail sales).

Internet sales are covered by BOP, SBS and HBS data. Goods purchased from abroad crossing the border of Estonia are included in the BOP.

SBS data are available at the 4-digit level of NACE. The SBS survey covers enterprises classified to class 47.91 (retail sale activities via the internet) of NACE Rev. 2 according to their principal activity. In addition, SBS data include the internet sales of enterprises whose principal activity is not sale via internet and who are operating in Estonia.

At the same time, the other main data source HBS includes all households' purchases no matter where they are made, either in Estonia or abroad, via the retail sales system or not, via the internet or not. Therefore, the HBS covers the data which are not reflected in SBS.

To compensate for possible under-coverage of the HFCE data compiled using different data sources, HBS and SBS data are compared continuously. Moreover, the final balancing of HFCE estimates is done using the supply and use tables framework.

The set of tables used in Sections 5.7.2.1. – 5.7.2.6. was presented in the course of the PHARE 1997 programme. In Estonia, analytical tables have been used since the Eurostat project on HFCE estimates in 1999. The systematic tabular approach is used for annual and also for

quarterly estimates. It gives the possibility of using the same framework for all HFCE estimates and so ensures that the results used in NA are of better quality.

Table 5.6 describes HFCE estimates based on HBS data, Table 5.8 describes HFCE estimates based on retail trade, and Table 5.10 describes HFCE estimates based on other sources. Table 5.13 is for commodity flow estimates and Table 5.15 is the summary table. Statistics Estonia has made some small changes in the tables by adding additional columns to better describe each step of estimation.

The calculations are actually made at the 4-digit COICOP level, but, in order to avoid large tables here, only the results at the 3-digit COICOP level are presented.

HBS-based estimates for HFCE

Since 2010, the HBS has been conducted with two-year intervals and the last surveys were in 2019 and 2020. Thus, the HBS was not conducted in 2021. In the years between surveys, the expenditures of households are derived using regression models. Forecasts of household expenditures for every quarter of 2021 were provided by the Population and Social Statistics Department. For more information about forecasting, see Chapter 10.

The HFCE estimates based on HBS data are derived as shown in Table 5.6.

Table 5.6 Conversion of HBS data for NA purposes (by COICOP divisions and groups), 2021
(million euros)

COICOP codes	COICOP	HBS raw data (in euros)	Population covered by HBS, millions	Purchases of goods and services – HBS raw data, grossed up for population	Population adjustments (persons living in institutions)	Adjustments for definitions and concepts (see table 5.7)	Adjustments for purchases outside the retail trade system	Adjustments for consumption of occasional and temporary activities	Consumption of illegally produced (or imported) goods and services	HFCE – national concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – domestic concept – after all adjustments (before reconciliation)
A	B	1	2	3	4	5	6	7	8	9=3+4+5+6+7+8	10	11	12=9-10+11
	HFCE – national concept	6,341.5	1.3	8,162.4	38.9	2,289.0	1,436.6	170.9	109.7	12,207.4	537.8	532.4	
	HFCE – domestic concept												12,202.0
01.	Food and non-alcoholic beverages	1,416.9	1.3	1,838.4	9.1	36.7	1,061.0			2,945.1	23.6	22.7	2,944.2
01.1	Food	1,306.8	1.3	1,695.5	8.3	36.5	977.6			2,718.0	21.9	21.1	2,717.2
01.2	Non-alcoholic beverages	110.1	1.3	142.9	0.7	0.2	83.3			227.1	1.8	1.7	227.0
02.	Alcoholic beverages, tobacco and narcotics	200.9	1.3	248.6	2.3		130.4		54.9	436.1	3.6	41.8	474.4
02.1	Alcoholic beverages	144.7	1.3	182.7	1.4		93.9		5.1	283.1	2.3	26.8	307.6
02.2	Tobacco	56.2	1.3	65.9	0.8		36.5		7.0	110.2	1.2	5.5	114.5
02.3	Narcotics		1.3						42.8	42.8		9.5	52.3

COICOP codes	COICOP	HBS raw data (in euros)	Population covered by HBS, millions	Purchases of goods and services – HBS raw data, grossed up for population	Population adjustments (persons living in institutions)	Adjustments for definitions and concepts (see table 5.7)	Adjustments for purchases outside the retail trade system	Adjustments for consumption of occasional and temporary activities	Consumption of illegally produced (or imported) goods and services	HFCE – national concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – domestic concept – after all adjustments (before reconciliation)
03.	Clothing and footwear	384.6	1.3	499.0	3.3			1.3		503.6	33.6	43.7	513.7
	goods	376.5	1.3	488.6	3.3					491.8	33.1	43.6	502.4
	services	8.0	1.3	10.4	0.0			1.3		11.8	0.5	0.1	11.4
03.1	Clothing	295.0	1.3	382.8	2.5			0.2		385.5	25.0	32.6	393.1
	goods	288.6	1.3	374.5	2.5					377.0	24.7	32.6	384.8
	services	6.4	1.3	8.3	0.0			0.2		8.5	0.3	0.0	8.2
03.2	Footwear	89.6	1.3	116.2	0.8					118.1	8.6	11.1	120.6
	goods	87.9	1.3	114.1	0.8					114.8	8.4	11.1	117.5
	services	1.7	1.3	2.1	0.0			1.1		3.3	0.2	0.0	3.1
04.	Housing, water, electricity, gas and other fuels	946.7	1.3	1,228.4	3.7	2,096.0				3,328.1	42.7	107.7	3,393.1
	goods	583.4	1.3	757.0	3.1	10.7				770.8			770.8
	services	363.3	1.3	471.3	0.6	2,085.3				2,557.3	42.7	107.7	2,622.3
04.1	Actual rentals for housing	194.4	1.3	252.3						252.3	28.3	45.1	269.1
04.2	Imputed rentals for housing		1.3			2,085.3				2,085.3	14.4	62.6	2,133.5
04.3	Maintenance and repair of the dwelling	130.4	1.3	169.3						169.3			169.3

COICOP codes	COICOP	HBS raw data (in euros)	Population covered by HBS, millions	Purchases of goods and services – HBS raw data, grossed up for population	Population adjustments (persons living in institutions)	Adjustments for definitions and concepts (see table 5.7)	Adjustments for purchases outside the retail trade system	Adjustments for consumption of occasional and temporary activities	Consumption of illegally produced (or imported) goods and services	HFCE – national concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – domestic concept – after all adjustments (before reconciliation)
	goods	32.9	1.3	42.7						42.7			42.7
	services	97.5	1.3	126.5						126.5			126.5
04.4	Water supply and miscellaneous services relating to the dwelling	154.3	1.3	200.2	1.0					201.2			201.2
	goods	83.0	1.3	107.7	0.4					108.1			108.1
	services	71.3	1.3	92.5	0.6					93.1			93.1
04.5	Electricity, gas and other fuels	467.5	1.3	606.6	2.7	10.7				620.1			620.1
05.	Furnishings, household equipment and routine maintenance of the house	492.0	1.3	638.4	0.2	8.0	5.4			652.1	17.7	6.9	641.2
	goods	482.2	1.3	625.7	0.2	8.0				634.0	17.7	6.8	623.1
	services	9.8	1.3	12.7			5.4			18.1		0.1	18.2
05.1	Furniture and furnishings, carpets and other floor coverings	176.6	1.3	229.1	0.1					229.2			229.2
	goods	176.2	1.3	228.6	0.1					228.7			228.7

COICOP codes	COICOP	HBS raw data (in euros)	Population covered by HBS, millions	Purchases of goods and services – HBS raw data, grossed up for population	Population adjustments (persons living in institutions)	Adjustments for definitions and concepts (see table 5.7)	Adjustments for purchases outside the retail trade system	Adjustments for consumption of occasional and temporary activities	Consumption of illegally produced (or imported) goods and services	HFCE – national concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – domestic concept – after all adjustments (before reconciliation)
	services	0.4	1.3	0.5						0.5			0.5
05.2	Household textiles	37.3	1.3	48.5						48.5	3.3	1.3	46.4
05.3	Household appliances	91.5	1.3	118.8	0.1					118.8	1.4	0.5	118.0
	goods	90.7	1.3	117.7	0.1					117.8	1.4	0.5	116.9
	services	0.8	1.3	1.1						1.1			1.1
05.4	Glassware, tableware and household utensils	39.4	1.3	51.1						51.1	4.2	1.6	48.5
05.5	Tools and equipment for house and garden	61.6	1.3	79.9	0.1	8.0				88.0			88.0
05.6	Goods and services for routine household maintenance	85.6	1.3	111.1	0.0		5.4			116.5	8.8	3.5	111.1
	goods	77.0	1.3	100.0	0.0					100.0	8.8	3.4	94.5
	services	8.6	1.3	11.1			5.4			16.5		0.1	16.6
06.	Health	318.7	1.3	413.3	0.9	5.9	12.5	68.4	0.2	501.2	4.2	14.1	511.1
	goods	192.9	1.3	250.2	0.5		12.5		0.2	263.3	3.0	10.0	270.3

COICOP codes	COICOP	HBS raw data (in euros)	Population covered by HBS, millions	Purchases of goods and services – HBS raw data, grossed up for population	Population adjustments (persons living in institutions)	Adjustments for definitions and concepts (see table 5.7)	Adjustments for purchases outside the retail trade system	Adjustments for consumption of occasional and temporary activities	Consumption of illegally produced (or imported) goods and services	HFCE – national concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – domestic concept – after all adjustments (before reconciliation)
	services	125.7	1.3	163.1	0.4	5.9		68.4		237.9	1.2	4.1	240.8
06.1	Medical products, appliances and equipment	192.9	1.3	250.2	0.5		12.5		0.2	263.3	3.0	10.0	270.3
06.2	Out-patient services	122.7	1.3	159.1	0.4	5.9		28.6		194.0	1.2	4.0	196.9
06.3	Hospital services	3.1	1.3	4.0	0.0			39.8		43.8	0.0	0.1	43.9
07.	Transport	955.9	1.3	1,186.7	4.3	54.6	88.5	0.8	53.6	1,388.5	88.6	50.7	1,350.6
	goods	794.1	1.3	976.7	3.5	3.3			53.6	1,037.1	10.2	1.1	1,028.0
	services	161.8	1.3	210.0	0.8	51.3	88.5	0.8		351.4	78.4	49.6	322.6
07.1	Purchase of vehicles	491.9	1.3	638.2						638.2			638.2
07.2	Operation of personal transport equipment	385.1	1.3	446.1	3.5	50.2	88.5		53.6	641.9	10.2	2.3	634.0
	goods	302.2	1.3	338.5	3.5	3.3			53.6	398.9	10.2	1.1	389.8
	services	82.9	1.3	107.6	0.0	46.9	88.5			243.0		1.2	244.2
07.3	Transport services	78.9	1.3	102.4	0.8	4.4		0.8		108.4	78.4	48.5	78.4
08.	Communication	314.7	1.3	408.3	1.3	11.8				421.4	46.2	5.8	381.1
	goods	34.4	1.3	44.7	0.1					44.8	3.4	1.3	42.7

COICOP codes	COICOP	HBS raw data (in euros)	Population covered by HBS, millions	Purchases of goods and services – HBS raw data, grossed up for population	Population adjustments (persons living in institutions)	Adjustments for definitions and concepts (see table 5.7)	Adjustments for purchases outside the retail trade system	Adjustments for consumption of occasional and temporary activities	Consumption of illegally produced (or imported) goods and services	HFCE – national concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – domestic concept – after all adjustments (before reconciliation)
	services	280.2	1.3	363.6	1.2	11.8				376.6	42.9	4.5	338.3
08.1	Postal services	10.6	1.3	13.7						13.7	1.2	0.1	12.6
08.2	Telephone and telefax equipment	34.4	1.3	44.7	0.1					44.8	3.4	1.3	42.7
08.3	Telephone and telefax services	269.7	1.3	349.9	1.2	11.8				362.9	41.7	4.4	325.7
09.	Recreation and culture	597.1	1.3	774.8	5.1	26.6	109.4			915.9	97.5	48.3	866.7
	goods	348.0	1.3	451.5	1.7	0.0	17.6			470.8	40.8	26.9	456.9
	services	249.1	1.3	323.3	3.5	26.6	91.8			445.1	56.7	21.4	409.8
09.1	Audio-visual, photographic and information processing equipment	77.3	1.3	100.3	0.4		2.1			102.8	7.0	2.7	98.5
	goods	76.1	1.3	98.8	0.4		2.1			101.3	7.0	2.7	96.9
	services	1.2	1.3	1.5						1.5		0.0	1.5
09.2	Other major durables for recreation and culture	8.8	1.3	11.5	0.0		3.2			14.7	0.7	0.3	14.2
	goods	7.9	1.3	10.3	0.0					10.3	0.7	0.3	9.9

COICOP codes	COICOP	HBS raw data (in euros)	Population covered by HBS, millions	Purchases of goods and services – HBS raw data, grossed up for population	Population adjustments (persons living in institutions)	Adjustments for definitions and concepts (see table 5.7)	Adjustments for purchases outside the retail trade system	Adjustments for consumption of occasional and temporary activities	Consumption of illegally produced (or imported) goods and services	HFCE – national concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – domestic concept – after all adjustments (before reconciliation)
	services	0.9	1.3	1.2			3.2			4.4	0.0	0.0	4.4
09.3	Other recreational items and equipment, garden products and pets	211.8	1.3	274.9	0.3	0.0	1.0			276.2	21.8	8.3	262.8
	goods	200.0	1.3	259.5	0.3	0.0				259.9	21.8	8.3	246.5
	services	11.8	1.3	15.3			1.0			16.3			16.3
09.4	Recreational and cultural services	157.9	1.3	204.9	3.5	25.8	87.6			321.7	56.7	19.4	284.4
09.5	Newspapers, books and stationery	63.9	1.3	82.9	0.9		15.6			99.4	11.3	15.6	103.6
09.6	Package holidays	77.4	1.3	100.4		0.8				101.2		2.0	103.2
10.	Education	40.8	1.3	52.9	0.5	1.3				54.8	18.8	24.9	60.8
10.1	Pre-primary and primary education	18.4	1.3	23.8						23.8			23.8
10.2	Secondary education	2.8	1.3	3.6						3.6			3.6

COICOP codes	COICOP	HBS raw data (in euros)	Population covered by HBS, millions	Purchases of goods and services – HBS raw data, grossed up for population	Population adjustments (persons living in institutions)	Adjustments for definitions and concepts (see table 5.7)	Adjustments for purchases outside the retail trade system	Adjustments for consumption of occasional and temporary activities	Consumption of illegally produced (or imported) goods and services	HFCE – national concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – domestic concept – after all adjustments (before reconciliation)
10.3	Post-secondary non-tertiary education	0.4	1.3	0.6						0.6			0.6
10.4	Tertiary education	6.5	1.3	8.4	0.2					8.6	7.4	6.8	7.9
10.5	Education not definable by level	12.7	1.3	16.5	0.3	1.3				18.2	11.5	18.1	24.8
11.	Restaurants and hotels	261.7	1.3	339.6	5.0	25.8				370.3	129.6	154.4	395.1
11.1	Catering services	218.9	1.3	284.0	1.2	20.9				306.1	91.3	116.4	331.3
11.2	Accommodation services	42.8	1.3	55.5	3.8	4.9				64.2	38.3	37.9	63.8
12.	Miscellaneous goods and services	411.6	1.3	534.0	3.2	22.2	29.4	100.3	1.0	690.2	31.6	11.3	669.9
	goods	179.8	1.3	233.4	2.0					235.3	18.6	7.1	223.9
	services	231.7	1.3	300.7	1.2	22.2	29.4	100.3	1.0	454.9	13.0	4.1	446.0
12.1	Personal care	214.8	1.3	278.7	2.3			42.5		323.5	24.6	6.3	305.2
	goods	129.1	1.3	167.5	1.4					168.9	13.4	5.1	160.6
	services	85.6	1.3	111.1	0.9			42.5		154.6	11.2	1.2	144.5
12.2	Prostitution		1.3						1.0	1.0		2.4	3.4

COICOP codes	COICOP	HBS raw data (in euros)	Population covered by HBS, millions	Purchases of goods and services – HBS raw data, grossed up for population	Population adjustments (persons living in institutions)	Adjustments for definitions and concepts (see table 5.7)	Adjustments for purchases outside the retail trade system	Adjustments for consumption of occasional and temporary activities	Consumption of illegally produced (or imported) goods and services	HFCE – national concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – domestic concept – after all adjustments (before reconciliation)
12.3	Personal effects n.e.c.	50.7	1.3	65.8	0.6					66.4	5.2	2.0	63.2
12.4	Social protection	42.9	1.3	55.7				57.8		113.5			113.5
12.5	Insurance	76.9	1.3	99.7		0.6				100.4			100.4
12.6	Financial services n.e.c.	3.6	1.3	4.7						4.7	0.0	0.2	4.9
12.7	Other services n.e.c.	22.7	1.3	29.4	0.3	21.6	29.4			80.7	1.8	0.3	79.3
	Total	6,341.5	1.3	8,162.4	38.9	2,289.0	1,436.6	170.9	109.7	12,207.4	537.8	532.4	12,202.0
	goods	4,609.3	1.3	5,914.8	25.7	58.7	1,221.4		108.7	7,329.3	153.9	161.4	7,336.8
	services	1,732.3	1.3	2,247.6	13.2	2,230.3	215.1	170.9	1.0	4,878.2	383.9	371.0	4,865.2

The calculation scheme of HFCE estimates is the following:

Column 1 (5.6, 1): HBS raw data – purchases of goods and services

These are the data on the average expenditure per household member per year. The total sum of this column is 6,341.5 million euros.

In Estonia, for HBS raw data, uplift factors (the recommendations from the GNP Committee Task Force on the HBS) are not calculated anymore after redesigning the HBS in 2010.

HBS data also cover internet sales. The HBS includes all households' purchases regardless of where they are made, either in Estonia or abroad, via the retail sales system or not, via the internet or not. Therefore, the HBS covers the data that are not reflected in SBS. To compensate for under-coverage of the data compiled using different data sources, the HBS and SBS data are compared constantly. The final balancing of HFCE estimates is done using the supply and use tables framework.

Column 2 (5.6, 2): Population covered by HBS, millions

As the HBS does not include the expenditures of persons living in institutions, several adjustments are made. This column shows the number of population covered by the HBS (this is 97.5% of the total population), which equals the population number minus the number of people living in institutions. Details about the number of people living in institutions are provided under the description of column 4.

Column 3 (5.6, 3): Purchases of goods and services – HBS raw data grossed up for population

$$\text{Total '5.6, 3'} = \text{'5.6, 1'} * \text{'5.6, 2'}$$

Here, the data on the average expenditure per household member per year are multiplied by the number of population covered by the HBS (for the year 2021, it was 1,297,521). The total sum of this column is 8,162.4 million euros (this is about 53.3% of total HFCE in 2021).

Column 4 (5.6, 4): Population adjustments (persons living in institutions)

Adjustments for the expenditures of persons living in institutions (rather than in households) are included here. The following types of persons living in institutions are included:

- 1) wards in social welfare institutions for children (general children's homes, residential educational institutions, children's homes of family type, youth homes and mixed-care social welfare institutions);
- 2) inmates in social welfare institutions for adults (in general care homes and in special care homes);
- 3) persons in shelters;
- 4) persons incarcerated in penal institutions;
- 5) students and pupils living in hostels, dormitories and boarding houses (vocational education, higher professional education, higher professional education and general education);
- 6) servicemen;
- 7) people living in abbeys.

In 2021, the number of persons living in institutions was 33,411 (this is about 2.5% of the total population).

The expenditures of persons living in institutions are calculated on the basis of an ad hoc survey and on the basis of the economic and social conditions of students in 2019.

The survey on the social and economic conditions of student life in Estonia carried out by Praxis Centre for Policy Studies in 2019 provides information about the expenditures of students according to the following consumption groups: accommodation, food, commodities, recreation, communication, transport, health, and study costs.

The total sum of this column is 38.9 million euros for 2021 (0.3% of HFCE).

Column 5 (5.6, 5): Adjustments to HBS – for definitions and concepts

Subtotal '5.6, 5' = Total '5.7, 1'

In this column, several adjustments (for the consumption of households' own production, goods and services received as wages and salaries in kind by employees, imputed rents etc.) are made in order to obtain HFCE estimates that are consistent with ESA 2010. See Table 5.7 below.

Column 6 (5.6, 6): Adjustments to HBS – for purchases outside the retail trade system

It is well known that the HBS does not cover the richest households very well and that the purchases of some types of goods and services are underestimated in the HBS. In this column, several adjustments are made for underestimated purchases of goods and services. In addition, it is known that the HBS does not cover expenditures by children, while the SBS survey does. Therefore, to reduce underreporting, HBS and SBS data are compared constantly.

Finally, a comparison with supply and use tables shows how precise the NA estimates are, and they are adjusted if appropriate. Information from the research of the Estonian Institute of Economic Research (EIER) is also available. The total sum of this column is 1,436.6 million euros.

Column 7 (5.6, 7): Adjustments to HBS – for consumption of occasional and temporary activities

These estimates cover the services of persons with secondary self-employed activities or occasional and temporary services on contracts. These adjustments are made mainly for different services: repair of clothing and footwear, out-patient and hospital services, transport services, hairdressing salons and personal grooming establishments, and social protection. The total sum of this column is 170.9 million euros.

Column 8 (5.6, 8): Adjustments to HBS – for consumption of illegally produced or imported goods and services

Estonia has made adjustments for the following expenditure groups which are produced (imported) illegally: narcotics, prostitution and smuggling (alcohol, tobacco, medicaments and fuel). A detailed description of the consumption of illegal production and import is presented in Chapter 7. The total sum of this column is 109.7 million euros (0.7% of total HFCE).

Column 9 (5.6, 9): HFCE national concept – final HBS-based figures after all adjustments before reconciliation

Total '5.6, 9' = '5.6, 3' + '5.6, 4' + '5.6, 5' + '5.6, 6' + '5.6, 7' + '5.6, 8'

HFCE estimates according to the national concept (12,207.4 million euros, which is about 79.8% of total HFCE) that are consistent with ESA 2010 are presented in this column.

Column 10 (5.6, 10): Resident households' expenditure in the rest of the world

HBS data cover resident households' expenditures abroad (537.8 million euros in 2021). Therefore, in order to arrive at the HFCE domestic concept estimate, this item has to be

deducted from HFCE estimates according to the national concept, using the BOP data estimated by Eesti Pank. A detailed description is provided in Section 5.7.2.4.

Column 11 (5.6, 11): Non-residents' expenditure on the economic territory

HBS data do not include non-residents' expenditures on the economic territory (532.4 million euros in Estonia in 2021). In order to make the transition to the domestic concept, this item has to be added to the HFCE national concept estimate. The data about non-residents' expenditures in Estonia are obtained from the BOP estimated by Eesti Pank. A detailed description is presented in Section 5.7.2.4.

Column 12 (5.6, 12): HFCE domestic concept – final HBS-based figures after all adjustments before reconciliation

Subtotal '5.6, 12' = '5.6, 9' – '5.6, 10' + '5.6, 11'

Final HBS-based estimates according to the domestic concept are presented in this column (12,202.0 million euros).

Table 5.7 provides input for Table 5.6 in terms of adjustments for definitions and concepts necessary for converting HBS data for NA purposes. Total adjustments from Table 5.7 (Column '5.7, 1') are to be transferred to Column '5.6, 5'.

Table 5.7 Conversion of HBS data for NA purposes (by COICOP divisions and groups). Adjustments for definitions and concepts (national concept), 2021
(million euros)

COICOP codes	COICOP	Adjustments to HBS-based data for definitions and concepts, total	of which						
			Consumption of households' own production	Goods and services received as wages and salaries in kind by employees	Other adjustments for NA concepts	of which			
						imputed rents, insurance services, clothing and food in the armed forces	gifts and transfers	licenses and fees	others
A	B	1=2+3+4	2	3	4=5+6+7+8	5	6	7	8
	HFCE – national concept	2,289.0	45.4	124.8	2,118.8	2,085.3		27.6	5.8
	HFCE – domestic concept								
01.	Food and non-alcoholic beverages	36.7	34.6	2.0					
01.1	Food	36.5	34.6	1.9					
01.2	Non-alcoholic beverages	0.2		0.2					
02.	Alcoholic beverages, tobacco and narcotics								
02.1	Alcoholic beverages								
04.	Housing, water, electricity, gas and other fuels	2,096.0	10.7		2,085.3	2,085.3			
	goods	10.7	10.7						
	services	2,085.3			2,085.3	2,085.3			
04.1	Actual rentals for housing								
04.2	Imputed rentals for housing	2,085.3			2,085.3	2,085.3			
04.5	Electricity, gas and other fuels	10.7	10.7						

COICOP codes	COICOP	Adjustments to HBS-based data for definitions and concepts, total	of which						
			Consumption of households' own production	Goods and services received as wages and salaries in kind by employees	Other adjustments for NA concepts	of which			
						imputed rents, insurance services, clothing and food in the armed forces	gifts and transfers	licenses and fees	others
05.	Furnishings, household equipment and routine maintenance of the house	8.0		8.0					
	goods	8.0		8.0					
	services								
05.5	Tools and equipment for house and garden	8.0		8.0					
06.	Health	5.9		5.9					
06.2	Out-patient services	5.9		5.9					
07.	Transport	54.6		46.7	7.9			6.0	1.9
	goods	3.3		3.3					
	services	51.3		43.4	7.9			6.0	1.9
07.2	Operation of personal transport equipment	50.2		44.1	6.0			6.0	
	goods	3.3		3.3					
	services	46.9		40.9	6.0			6.0	
07.3	Transport services	4.4		2.6	1.9				1.9
08.	Communication	11.8		11.8					
08.3	Telephone and telefax services	11.8		11.8					
09.	Recreation and culture	26.6	0.0	26.6					
09.4	Recreational and cultural services	25.8		25.8					
09.6	Package holidays	0.8		0.8					
10.	Education	1.3		1.3					

COICOP codes	COICOP	Adjustments to HBS-based data for definitions and concepts, total	of which						
			Consumption of households' own production	Goods and services received as wages and salaries in kind by employees	Other adjustments for NA concepts	of which			
						imputed rents, insurance services, clothing and food in the armed forces	gifts and transfers	licenses and fees	others
10.5	Education not definable by level	1.3		1.3					
11.	Restaurants and hotels	25.8		21.8	4.0				4.0
11.1	Catering services	20.9		17.0	4.0				4.0
11.2	Accommodation services	4.9		4.9					
12.	Miscellaneous goods and services	22.2		0.6	21.6			21.6	
	goods								
	services	22.2		0.6	21.6			21.6	
12.5	Insurance	0.6		0.6					
12.7	Other services n.e.c.	21.6			21.6			21.6	
	Total	2,289.0	45.4	124.8	2,118.8	2,085.3		27.6	5.8
	goods	58.7	45.4	13.3					
	services	2,230.3		111.5	2,118.8	2,085.3		27.6	5.8

The following columns are included in Table 5.7:

Column 1 (5.7, 1): Total adjustments to HBS-based data for definitions and concepts

Total '5.7, 1' = '5.6, 5'; Total '5.7, 1' = '5.7, 2' + '5.7, 3' + '5.7, 4'

In this column, several adjustments are made in order to obtain HFCE estimates that are consistent with ESA 2010 (the total amount is 2,289.0 million euros, which is 18.8% of HBS-based HFCE).

Column 2 (5.7, 2): Adjustment for consumption of households' own production

The total sum of this column is 45.4 million euros. Adjustments are made for the consumption of production for own final use, particularly agricultural products (also including forestry and fishery products). The adjustment for consumption of households' own production is shown separately, as it is not included in the HBS raw data. Own consumption by farmers and consumption of production from private gardens are the most important types of consumption. The role of own-produced food (e.g. raw milk, vegetables, fruit, meat, honey, eggs, fish) and fuel wood is quite important in Estonia (as it is cheaper for households, and Estonians like to consume own-produced output).

Estimates on households' own production are obtained from the production side for the households sector. The same figures are included in the output and the expenditure approach. Own production is valued at basic prices. The description of the consumption of households' own production is presented in Section 3.7.1.

Column 3 (5.7, 3): Adjustment for goods and services received as wages and salaries in kind by employees

Adjustments (124.8 million euros, which is 0.8% of final HFCE) are made for the consumption of goods and services received as wages and salaries in kind by employees. A complete description of wages and salaries in kind is presented in Section 4.6.1 and Chapter 7.

Column 4 (5.7, 4): All other adjustments for definitions and concepts (compliance with NA rules)

Subtotal '5.7, 4' = '5.7, 5' + '5.7, 6' + '5.7, 7' + '5.7, 8'

The sum total of this column is 2,118.8 million euros. Adjustments are made for imputed rents (98.4% of this column), licenses and fees for services provided by the government to households and also for tips.

Column 5 (5.7, 5): Special adjustments such as imputed rents, insurance services, clothing and food in the armed forces

In Estonia, an adjustment (in the amount of 2,085.3 million euros) in Column 5 is made only for imputed rentals. HFCE financed directly by insurance companies is partly covered (currently, there is not enough information to estimate this item separately). The description of the service charge concept is provided in Section 5.7.3.12. Clothing and food provided by the army are recorded in the general government sector as government consumption.

Column 6 (5.7, 6): Gifts and transfers in kind from the rest of the world to households, net

There are no adjustments in this column. In Estonia, all charity transfers are going through NPISH. Therefore, all these transactions are not part of HFCE to avoid double accounting.

Column 7 (5.7, 7): Licenses and fees for services provided by government to households

In this column, adjustments (27.6 million euros) are made for HFCE in Estonia. These are state fees on legal documents paid by households (these are treated as government services). The data are based on information derived from the PSFS. For more information, see Section 5.2.1 1) k) and 5.2.1 2) b).

Column 8 (5.7, 8): Other adjustments for NA definitions and concepts

In this column, adjustments are made for tips: paid to taxi drivers, in restaurants and accommodation enterprises. It is not common in Estonia to give tips and, therefore, the amount is quite small: 5.8 million euros. Compared to the same item in Column '5.11, 8', the figure in this table is relatively small, because it is known that the HBS data include some data on tips. Further information about tips is presented in Section 7.1.3.5.2.

Retail trade statistics based estimates for HFCE

Next, the HFCE estimates based on RT data are outlined (see Table 5.8).

Table 5.8 Conversion of retail sales data for NA purposes (by COICOP divisions and groups), 2021
(million euros)

COICOP codes	COICOP	Retail sales – raw data	Adjustments for non-observed retail sales	Retail sales other than for HFCE	Adjustment for sales for HFCE outside the retail trade system	Adjustment for sales from intentionally non-registered units	Adjustments for definitions and concepts (see table 5.9)	Consumption of illegally produced (or imported) goods and services	HFCE – domestic concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – national concept – after all adjustments (before reconciliation)
A	B	1	2	3	4	5	6	7	8=1+2-3+4+5+6+7	9	10	11=8+9-10
	HFCE – national concept									153.9	151.9	8,571.4
	HFCE – domestic concept	11,997.9	89.0	4,412.3	703.6	66.7	58.7	65.9	8,569.4			
01.	Food and non-alcoholic beverages	2,728.6	58.6	303.7	389.4	29.9	36.7		2,939.5	23.6	22.7	2,940.4
01.1	Food	2,533.4	55.9	284.2	348.7	24.3	36.5		2,714.7	21.9	21.1	2,715.5
01.2	Non-alcoholic beverages	195.2	2.7	19.5	40.7	5.5	0.2		224.8	1.8	1.7	224.9
02.	Alcoholic beverages, tobacco and narcotics	886.0		5.6	161.5	36.8		12.1	1,090.7	3.6	32.4	1,061.9
02.1	Alcoholic beverages	556.3		5.6	112.7	36.8		5.1	705.3	2.3	26.8	680.8
02.2	Tobacco	329.7			48.8			7.0	385.4	1.2	5.5	381.1
03.	Clothing and footwear	955.9	2.1	91.1	39.4				906.2	33.1	43.6	895.7
03.1	Clothing	773.5	1.7	81.0	34.3				728.5	24.7	32.6	720.6

COICOP codes	COICOP	Retail sales – raw data	Adjustments for non-observed retail sales	Retail sales other than for HFCE	Adjustment for sales for HFCE outside the retail trade system	Adjustment for sales from intentionally non-registered units	Adjustments for definitions and concepts (see table 5.9)	Consumption of illegally produced (or imported) goods and services	HFCE – domestic concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – national concept – after all adjustments (before reconciliation)
A	B	1	2	3	4	5	6	7	8=1+2-3+4+5+6+7	9	10	11=8+9-10
03.2	Footwear	182.3	0.4	10.1	5.2				177.7	8.4	11.1	175.1
04.	Housing, water, electricity, gas and other fuels	629.7	3.2	438.1			10.7		205.6			205.6
04.3	Maintenance and repair of the dwelling	530.0	0.1	397.5					132.6			132.6
04.5	Electricity, gas and other fuels	99.8	3.1	40.6			10.7		73.0			73.0
05.	Furnishings, household equipment and routine maintenance of the house	1,353.9	11.8	638.9		0.0	8.0		734.9	17.7	6.8	745.8
05.1	Furniture and furnishings, carpets and other floor coverings	427.0	3.2	155.4					274.9			274.9
05.2	Household textiles	90.3	0.2	22.9		0.0			67.6	3.3	1.3	69.6
05.3	Household appliances	367.1	1.5	178.4					190.2	1.4	0.5	191.1
05.4	Glassware, tableware and household utensils	103.4	3.3	37.6					69.1	4.2	1.6	71.7

COICOP codes	COICOP	Retail sales – raw data	Adjustments for non-observed retail sales	Retail sales other than for HFCE	Adjustment for sales for HFCE outside the retail trade system	Adjustment for sales from intentionally non-registered units	Adjustments for definitions and concepts (see table 5.9)	Consumption of illegally produced (or imported) goods and services	HFCE – domestic concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – national concept – after all adjustments (before reconciliation)
A	B	1	2	3	4	5	6	7	8=1+2-3+4+5+6+7	9	10	11=8+9-10
05.5	Tools and equipment for house and garden	274.2	3.3	223.3			8.0		62.3			62.3
05.6	Goods and services for routine household maintenance	91.8	0.3	21.2					70.9	8.8	3.4	76.3
06.	Health	667.1	0.3	382.4				0.2	285.2	3.0	10.0	278.2
06.1	Medical products, appliances and equipment	667.1	0.3	382.4				0.2	285.2	3.0	10.0	278.2
07.	Transport	3,239.3	0.5	2,214.8			3.3	53.6	1,081.9	10.2	1.1	1,091.1
07.1	Purchase of vehicles	1,459.8	0.0	1,147.2					312.6			312.6
07.2	Operation of personal transport equipment	1,779.5	0.5	1,067.5			3.3	53.6	769.4	10.2	1.1	778.5
08.	Communication	96.6	1.5	42.2	0.0				55.9	3.4	1.3	58.0
08.2	Telephone and telefax equipment	96.6	1.5	42.2	0.0				55.9	3.4	1.3	58.0
09.	Recreation and culture	1,001.1	10.1	275.0	61.8	0.0	0.0		797.9	40.8	26.9	811.8
09.1	Audio-visual, photographic and information processing equipment	318.7	0.3	105.7	58.6				271.9	7.0	2.7	276.2

COICOP codes	COICOP	Retail sales – raw data	Adjustments for non-observed retail sales	Retail sales other than for HFCE	Adjustment for sales for HFCE outside the retail trade system	Adjustment for sales from intentionally non-registered units	Adjustments for definitions and concepts (see table 5.9)	Consumption of illegally produced (or imported) goods and services	HFCE – domestic concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – national concept – after all adjustments (before reconciliation)
A	B	1	2	3	4	5	6	7	8=1+2-3+4+5+6+7	9	10	11=8+9-10
09.2	Other major durables for recreation and culture	10.0	0.0	0.5		0.0			9.5	0.7	0.3	10.0
09.3	Other recreational items and equipment, garden products and pets	493.6	8.8	159.5			0.0		342.9	21.8	8.3	356.3
09.4	Recreational and cultural services											
09.5	Newspapers, books and stationery	178.7	1.0	9.2	3.2				173.6	11.3	15.6	169.4
12.	Miscellaneous goods and services	439.7	0.9	20.5	51.5				471.7	18.6	7.1	483.1
12.1	Personal care	305.4	0.3	13.8	30.8				322.8	13.4	5.1	331.0
12.3	Personal effects n.e.c.	134.3	0.6	6.7	20.7				148.9	5.2	2.0	152.1
	Total	11,997.9	89.0	4,412.3	703.6	66.7	58.7	65.9	8,569.4	153.9	151.9	8,571.4

The SBS survey is the main source for Table 5.8, as the survey covers the turnover of retail trade. Moreover, SBS data cover internet sales. SBS data are available at the 4-digit level of NACE. The SBS survey covers enterprises classified to class 47.91 (retail sale activities via internet) of NACE Rev. 2 according to their principal activity. In addition, SBS data include the internet sales of enterprises whose principal activity is not sale via internet and who are operating in Estonia. To compensate for under-coverage of the data compiled using different data sources, the HBS and SBS data are compared constantly. The final balancing of HFCE estimates is done using the supply and use tables framework. The HBS raw data are used to allocate SBS raw data to COICOP groups.

The composition of the turnover of retail trade is the following:

- Data on the turnover of retail trade generated in NACE 45 (wholesale and retail trade and repair of motor vehicles and motorcycles) were available at the required level for HFCE, as presented in the table below.

SBS 2021
motor vehicles
motor vehicle parts and accessories
fuel
other goods

- Data on the turnover of retail trade generated in NACE 46 (wholesale trade, except motor vehicles and motorcycles) were too aggregated and, therefore, the structure of the data from the 2019 SBS survey was used to provide 2021 data at the required level for HFCE.

SBS 2021	SBS 2019
retail sale of wholesale traders from shops, kiosks and counters to individuals	foodstuffs, beverages and tobacco
	motor vehicles (incl. motorcycles), parts and accessories
	fuel
	other goods

- For the turnover of retail sales generated in NACE 47 (retail trade, except motor vehicles and motorcycles), the structure of 2019 SBS data was used again:

SBS 2021	SBS 2019
foodstuffs	fruit and vegetables
	meat and meat products
	fish and fish products
	bakery and confectionary products
	other food products
	non-alcoholic beverages
alcoholic beverages	alcoholic beverages
tobacco	tobacco
fuel	fuel
clothing and footwear and fabrics	textiles and haberdashery
	clothes
	footwear and leather goods

SBS 2021	SBS 2019
other manufactured goods	furniture, lamps and other household equipment
	electric household appliances
	telecommunications, audio and video equipment
	building materials and hardware
	books, newspapers and stationery
	computers, computer peripherals and software
	equipment for sport, games, watches, jewellery
	pharmaceutical goods
	medical and orthopaedic goods

The calculation scheme of HFCE estimates is the following:

Column 1 (5.8, 1): Retail sales – raw data as provided by the branch statistics

This column contains SBS raw data on retail sales, which are allocated to COICOP groups. The sum total of this column is 11,997.9 million euros for 2021 (78.4% of HFCE).

Column 2 (5.8, 2): Adjustments to retail sales – for non-observed components of retail sales

These adjustments are for enterprises that are not covered in the Statistical Profile used for the survey. Information for these enterprises is derived from the Tax and Customs Board (from the tax declarations on the business income of sole proprietors), and NA special estimates of hidden economy are also used. Further details are provided in Chapter 7. The sum total of this column is 89.0 million euros for 2021.

Column 3 (5.8, 3): Adjustments to retail sales – for purchases to be treated as IC or GFCF rather than HFCE

Not all SBS data are destined for HFCE; there are also goods that serve business purposes (intermediate consumption, IC) or belong to GFCF. Data from enterprises are adjusted to exclude business purchases. Some information about the IC of services is available from Module R of the SBS survey (only for some turnovers). Unfortunately, Module R is not available for retail trade. For this part, expert opinions of the sellers about their customers are taken into account. The experience of Finland and Norway in treating IC is also used. The share of this column is 36.8% of Column '5.8, 1' (4,412.3 million euros).

Column 4 (5.8, 4): Adjustments to retail sales – for sales to households outside the retail trade system

Adjustments are made to include all sales for HFCE that are not covered by the SBS survey. These adjustments include sales at marketplaces by non-registered traders and also by units that are not obliged to register. The value of purchases is calculated using EIER data. The sum total of this column is 703.6 million euros (4.6% of the total HFCE).

Column 5 (5.8, 5): Adjustments to retail sales – for sales from intentionally non-registered units

Adjustments are made for sales from intentionally non-registered units. The value of these purchases is calculated using the results of the research done by EIER. The sum total of this column is 66.7 million euros (0.4% of the total HFCE).

Column 6 (5.8, 6): Adjustments to retail sales – for different treatment in NA (adjustments for definitions and concepts)

Subtotal '5.8, 6' = Total '5.9, 1'

Several adjustments (58.7 million euros) are made in order to obtain HFCE estimates that are consistent with ESA 2010 (for example, for the consumption of households' own production, for goods and services received as wages and salaries in kind by employees etc.). See Table 5.9 below.

Column 7 (5.8, 7): Adjustments to retail sales – for consumption of illegally produced or imported goods and services

Adjustments are made for the smuggling of alcoholic beverages, tobacco, medicaments and fuel in Table 5.8 (65.9 million euros). Estimates are obtained from the production approach. A further description of the consumption of illegal production and import is presented in Chapter 7.

Column 8 (5.8, 8): HFCE domestic concept – final retail sales based figures after all adjustments before reconciliation

Subtotal '5.8, 8' = '5.8, 1' + '5.8, 2' – '5.8, 3' + '5.8, 4' + '5.8, 5' + '5.8, 6' + '5.8, 7'

HFCE estimates (8,569.4 million euros) that are consistent with ESA 2010 are presented in this column.

Column 9 (5.8, 9): Resident households' expenditure in the rest of the world

SBS raw data do not include the expenditures of resident households incurred abroad (153.9 million euros in 2021). Therefore, data from the BOP are included. For a brief overview of residents' expenditure in the rest of the world, see Table 5.6 above.

Column 10 (5.8, 10): Non-residents' expenditure on the economic territory

See Table 5.6 above (the same figures by COICOP group as in Column '5.6, 11'). SBS raw data include the expenditures of non-residents on the economic territory (151.9 million euros in 2021). In order to calculate HFCE according to the national concept, this item is to be deducted from the HFCE estimate according to the domestic concept using the BOP data.

Column 11 (5.8.11): HFCE national concept – final retail sales based figures after all adjustments before reconciliation

Total '5.8, 11' = '5.8, 8' + '5.8, 9' – '5.8, 10'

Final RT-based estimates according to the national concept (8,571.4 million euros, which is 56.0% of the total HFCE) are presented in this column.

Table 5.9 provides input for Table 5.8 in terms of adjustments for definitions and concepts needed for converting RT data for NA purposes. Total adjustments from Table 5.9 (Column 1) are to be transferred to Column 6 of Table 5.8 above.

Table 5.9 Conversion of retail sales data for NA purposes (by COICOP divisions and groups). Adjustments for definitions and concepts (domestic concept), 2021
(million euros)

COICO P codes	COICOP	Adjustments to retail sales based data for definitions and concepts, total	of which						
			Production for own final consumption	Goods and services received as income in kind by employees	Other adjustments for NA concepts	of which			
						imputed rents, insurance services, clothing and food in the armed forces	gifts and transfers	licenses and fees	others
A	B	1=2+3+4	2	3	4=5+6+7+8	5	6	7	8
	HFCE – national concept								
	HFCE – domestic concept	58.7	45.4	13.3	0.0	0.0	0.0	0.0	0.0
01.	Food and non-alcoholic beverages	36.7	34.6	2.0	0.0	0.0	0.0	0.0	0.0
01.1	Food	36.5	34.6	1.9					
01.2	Non-alcoholic beverages	0.2		0.2					
04.	Housing, water, electricity, gas and other fuels	10.7	10.7		0.0	0.0	0.0	0.0	0.0
04.5	Electricity, gas and other fuels	10.7	10.7						
05.	Furnishings, household equipment and routine maintenance of the house	8.0		8.0	0.0	0.0	0.0	0.0	0.0
05.5	Tools and equipment for house and garden	8.0		8.0					
07.	Transport	3.3		3.3	0.0	0.0	0.0	0.0	0.0
07.2	Operation of personal transport equipment	3.3		3.3					
	Total	58.7	45.4	13.3	0.0	0.0	0.0	0.0	0.0

Column 1 (5.9, 1): Total adjustments to retail sales data for definitions and concepts

Total '5.9, 1' = '5.8, 6'; Total '5.9, 1' = '5.9, 2' + '5.9, 3' + '5.9, 4'

Several adjustments (58.7 million euros, which is 0.4% of the total HFCE in 2021) are made in order to obtain HFCE estimates that are consistent with ESA 2010.

Column 2 (5.9, 2): Adjustment for consumption of households' own production

See Table 5.7 above. The sum total of this column is 45.4 million euros.

Column 3 (5.9, 3): Adjustment for goods and services received as wages and salaries in kind by employees

Adjustments are made for the consumption of goods and services received as wages and salaries in kind by employees. The relevant items for this column are described in Column '5.7, 3' above. The sum total of this column is 13.3 million euros (the same figures as in column '5.7, 3' for goods).

Column 4 (5.9, 4): All other adjustments for definitions and concepts (compliance with NA rules)

Subtotal '5.9, 4' = '5.9, 5' + '5.9, 6' + '5.9, 7' + '5.9, 8'

There are no adjustments in this column. In Estonia, no other adjustments to retail sales based data are made.

Estimates for HFCE based on other sources

The HFCE estimates based on sources other than the HBS or retail sales data are derived as shown in Table 5.10.

Table 5.10 Conversion of data from other sources than HBS, retail trade and commodity flow method for NA purposes (by COICOP divisions and groups), 2021
(million euros)

COICOP codes	COICOP	Source, national (NC) or domestic (DC) concept	Purchases of goods and services – other sources – raw data	Purchases of goods and services other than for HFCE	Purchases of goods and services – other sources	Adjustment for non-observed components	Adjustments for definitions and concepts (see Table 5.11)	Adjustment for non-registered units	Consumption of illegally produced (or imported) goods and services	HFCE – domestic concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – national concept – after all adjustments (before reconciliation)
A	B	C	1	2	3=1-2	4	5	6	7	8=3+4+5+6+7	9	10	11=8+9-10
	HFCE – national concept										383.9	380.4	7,337.7
	HFCE – domestic concept		18,264.3	13,378.3	4,886.0	117.8	2,254.1	20.6	55.7	7,334.2			
02.	Alcoholic beverages, tobacco and narcotics								52.3	52.3		9.5	42.8
02.3	Narcotics	NA special estimate, DC							52.3	52.3		9.5	42.8
03.	Clothing and footwear		201.3	190.4	10.9	0.9				11.8	0.5	0.1	12.2
	goods												
	services		201.3	190.4	10.9	0.9				11.8	0.5	0.1	12.2
03.1	Clothing	SBS, DC	101.7	93.8	7.9	0.4				8.3	0.3	0.0	8.6
03.2	Footwear		99.6	96.6	3.0	0.5				3.5	0.2	0.0	3.6

COICOP codes	COICOP	Source, national (NC) or domestic (DC) concept	Purchases of goods and services – other sources – raw data	Purchases of goods and services other than for HFCE	Purchases of goods and services – other sources	Adjustment for non-observed components	Adjustments for definitions and concepts (see Table 5.11)	Adjustment for non-registered units	Consumption of illegally produced (or imported) goods and services	HFCE – domestic concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – national concept – after all adjustments (before reconciliation)
A	B	C	1	2	3=1-2	4	5	6	7	8=3+4+5+6+7	9	10	11=8+9-10
04.	Housing, water, electricity, gas and other fuels		1,899.9	588.5	1,311.3	1.3	2,096.0			3,408.6	42.7	107.7	3,343.6
	goods		872.8		872.8		10.7			883.5			883.5
	services		1,027.1	588.5	438.6	1.3	2,085.3			2,525.2	42.7	107.7	2,460.2
04.1	Actual rentals for housing	NA special estimate, DC	322.0		322.0					322.0	28.3	45.1	305.1
04.2	Imputed rentals for housing						2,085.3			2,085.3	14.4	62.6	2,037.2
04.3	Maintenance and repair of the dwelling	NA special estimate, DC	34.5		34.5					34.5			34.5
	goods		27.2		27.2					27.2			27.2
	services		7.3		7.3					7.3			7.3
04.4	Water supply and miscellaneous services relating to the dwelling	Environment statistics, DC	748.8	588.5	160.3	1.3				161.6			161.6
	goods		51.0		51.0					51.0			51.0

COICOP codes	COICOP	Source, national (NC) or domestic (DC) concept	Purchases of goods and services – other sources – raw data	Purchases of goods and services other than for HFCE	Purchases of goods and services – other sources	Adjustment for non-observed components	Adjustments for definitions and concepts (see Table 5.11)	Adjustment for non-registered units	Consumption of illegally produced (or imported) goods and services	HFCE – domestic concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – national concept – after all adjustments (before reconciliation)
A	B	C	1	2	3=1-2	4	5	6	7	8=3+4+5+6+7	9	10	11=8+9-10
	services		697.8	588.5	109.3	1.3				110.6			110.6
04.5	Electricity, gas and other fuels	Energy statistics, DC	794.6		794.6		10.7			805.3			805.3
05.	Furnishings, household equipment and routine maintenance of the house	SBS, DC, PSFS, DC	536.1	512.0	24.1	4.1				28.2		0.1	28.1
	goods		10.9	6.3	4.6	0.7				5.3			5.3
	services		525.1	505.7	19.5	3.4				22.9		0.1	22.8
05.1	Furniture and furnishings, carpets and other floor coverings		1.8	1.5	0.4	0.1				0.5			0.5
05.3	Household appliances		3.9	2.6	1.3	0.7				2.0			2.0
05.5	Tools and equipment for house and garden		10.9	6.3	4.6	0.7				5.3			5.3
05.6	Goods and services for		519.5	501.7	17.8	2.6				20.4		0.1	20.3

COICOP codes	COICOP	Source, national (NC) or domestic (DC) concept	Purchases of goods and services – other sources – raw data	Purchases of goods and services other than for HFCE	Purchases of goods and services – other sources	Adjustment for non-observed components	Adjustments for definitions and concepts (see Table 5.11)	Adjustment for non-registered units	Consumption of illegally produced (or imported) goods and services	HFCE – domestic concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – national concept – after all adjustments (before reconciliation)
A	B	C	1	2	3=1-2	4	5	6	7	8=3+4+5+6+7	9	10	11=8+9-10
	routine household maintenance												
06.	Health		590.1	315.4	274.7		5.9			280.6	1.2	4.1	277.7
	goods												
	services	SBS, PSFS, DC	590.1	315.4	274.7		5.9			280.6	1.2	4.1	277.7
06.2	Out-patient services		488.7	297.8	191.0		5.9			196.9	1.2	4.0	194.0
06.3	Hospital services		101.3	17.6	83.7					83.7	0.0	0.1	83.7
07.	Transport		4,891.4	4,243.3	648.0	45.2	56.9	7.6		757.8	78.4	49.6	786.6
	goods		292.7		292.7					292.7			292.7
	services		4,598.7	4,243.3	355.4	45.2	56.9	7.6		465.1	78.4	49.6	493.9
07.1	Purchase of vehicles	NA special estimate, DC	292.7		292.7					292.7			292.7
07.2	Operation of personal transport equipment	SBS, DC	4,060.7	3,877.4	183.3	8.7	46.9	7.6		246.5		1.2	245.4
07.3	Transport services	NA special	538.0	366.0	172.1	36.5	10.0			218.6	78.4	48.5	248.5

COICOP codes	COICOP	Source, national (NC) or domestic (DC) concept	Purchases of goods and services – other sources – raw data	Purchases of goods and services other than for HFCE	Purchases of goods and services – other sources	Adjustment for non-observed components	Adjustments for definitions and concepts (see Table 5.11)	Adjustment for non-registered units	Consumption of illegally produced (or imported) goods and services	HFCE – domestic concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – national concept – after all adjustments (before reconciliation)
A	B	C	1	2	3=1-2	4	5	6	7	8=3+4+5+6+7	9	10	11=8+9-10
		estimate, DC											
08.	Communication	SBS, DC	979.9	636.1	343.9	2.1	11.8			357.8	42.9	4.5	396.1
	goods												
	services		979.9	636.1	343.9	2.1	11.8			357.8	42.9	4.5	396.1
08.1	Postal services		297.3	239.5	57.7	2.0				59.7	1.2	0.1	60.8
08.3	Telephone and telefax services	SBS, DC	682.7	396.5	286.1	0.2	11.8			298.1	41.7	4.4	335.3
09.	Recreation and culture		1,279.8	764.0	515.7	11.8	18.6			546.1	56.7	21.4	581.4
	goods		2.5	0.3	2.3	1.1				3.4			3.4
	services		1,277.2	763.8	513.5	10.7	18.6			542.7	56.7	21.4	578.0
09.1	Audio-visual, photographic and information processing equipment	SBS, DC	235.6	234.1	1.5	0.6				2.1		0.0	2.1
09.2	Other major durables for		20.1	16.3	3.8	0.6				4.4	0.0	0.0	4.5

COICOP codes	COICOP	Source, national (NC) or domestic (DC) concept	Purchases of goods and services – other sources – raw data	Purchases of goods and services other than for HFCE	Purchases of goods and services – other sources	Adjustment for non-observed components	Adjustments for definitions and concepts (see Table 5.11)	Adjustment for non-registered units	Consumption of illegally produced (or imported) goods and services	HFCE – domestic concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economy	HFCE – national concept – after all adjustments (before reconciliation)
A	B	C	1	2	3=1-2	4	5	6	7	8=3+4+5+6+7	9	10	11=8+9-10
	recreation and culture												
09.3	Other recreational items and equipment, garden products and pets	SBS, DC, PSFS, NA special estimate, DC	38.3	21.7	16.6	3.9				20.5			20.5
09.4	Recreational and cultural services		837.9	401.9	435.9	6.2	17.7			459.9	56.7	19.4	497.2
09.6	Package holidays		148.0	90.0	57.9	0.5	0.8			59.2		2.0	57.3
10.	Education	SBS, PSFS, DC	103.2		103.2	3.7	1.3			108.2	18.8	24.9	102.2
10.1	Pre-primary and primary education	SBS, DC	45.5		45.5	1.4				46.9			46.9
10.2	Secondary education	SBS, PSFS, DC;	8.9		8.9	0.2				9.2			9.2
10.3	Post-secondary		2.2		2.2	0.1				2.3			2.3

COICOP codes	COICOP	Source, national (NC) or domestic (DC) concept	Purchases of goods and services – other sources – raw data	Purchases of goods and services other than for HFCE	Purchases of goods and services – other sources	Adjustment for non-observed components	Adjustments for definitions and concepts (see Table 5.11)	Adjustment for non-registered units	Consumption of illegally produced (or imported) goods and services	HFCE – domestic concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – national concept – after all adjustments (before reconciliation)
A	B	C	1	2	3=1-2	4	5	6	7	8=3+4+5+6+7	9	10	11=8+9-10
	non-tertiary education	NA special estimate, DC											
10.4	Tertiary education		20.7		20.7	0.8				21.5	7.4	6.8	22.2
10.5	Education not definable by level		25.8		25.8	1.3	1.3			28.4	11.5	18.1	21.7
11.	Restaurants and hotels		795.8		795.8	1.4	41.4			838.6	129.6	154.4	813.8
11.1	Catering services		652.0		652.0	0.2	32.9			685.2	91.3	116.4	660.1
11.2	Accommodation services	NA special estimate, DC	143.8		143.8	1.1	8.5			153.4	38.3	37.9	153.7
12.	Miscellaneous goods and services		6,987.0	6,128.6	858.4	47.3	22.2	13.0	3.4	944.3	13.0	4.1	953.2
	goods		4.3	0.2	4.0	0.1				4.2			4.2
	services		6,982.8	6,128.4	854.4	47.2	22.2	13.0	3.4	940.1	13.0	4.1	949.0
12.1	Personal care	SBS, DC	279.3	169.8	109.5	22.0		13.0		144.5	11.2	1.2	154.6
12.2	Prostitution	NA special estimate, DC							3.4	3.4		2.4	1.0

COICOP codes	COICOP	Source, national (NC) or domestic (DC) concept	Purchases of goods and services – other sources – raw data	Purchases of goods and services other than for HFCE	Purchases of goods and services – other sources	Adjustment for non-observed components	Adjustments for definitions and concepts (see Table 5.11)	Adjustment for non-registered units	Consumption of illegally produced (or imported) goods and services	HFCE – domestic concept – after all adjustments (before reconciliation)	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	HFCE – national concept – after all adjustments (before reconciliation)
A	B	C	1	2	3=1-2	4	5	6	7	8=3+4+5+6+7	9	10	11=8+9-10
12.3	Personal effects n.e.c.	SBS, DC	4.3	0.2	4.0	0.1				4.2			4.2
12.4	Social protection	SBS, PSFS, DC	765.9	634.3	131.6	2.2				133.7			133.7
12.5	Insurance	Insurance statistics	79.5		79.5		0.6			80.1			80.1
12.6	Financial services n.e.c.	Financial statistics, SBS, DC	466.6		466.6					466.6	0.0	0.2	466.4
12.7	Other services n.e.c.	SBS, PSFS, DC	5,391.5	5,324.3	67.2	22.9	21.6	0.0		111.7	1.8	0.3	113.2
	Total		18,264.3	13,378.3	4,886.0	117.8	2,254.1	20.6	55.7	7,334.2	383.9	380.4	7,337.7
	goods		1,183.1	6.8	1,176.3	2.0	10.7		52.3	1,241.3		9.5	1,231.9
	services		17,081.2	13,371.5	3,709.7	115.8	2,243.4	20.6	3.4	6,092.9	383.9	371.0	6,105.9

Information from two modules of the SBS survey is used for this: Module D (net turnover by NACE activities) and Module R (turnover of services according to serviced clients). Also, special estimates of NA experts are used. An overview of the information used from Modules D and R is presented below.

Module D

- The commodity breakdown derived from NACE 45 (wholesale and retail trade and repair of motor vehicles and motorcycles) distinguishes between: maintenance and repair of motor vehicles, repair of commodities, catering services, accommodation services and other services.
- The commodity breakdown derived from NACE 47 (retail trade, except motor vehicles and motorcycles) distinguishes between: maintenance and repair of motor vehicles, repair of commodities, catering services, accommodation services, real estate services and other services.
- The commodity breakdown derived from NACE 55, 56 (accommodation; food and beverage service activities) distinguishes between the following services: maintenance and repair of motor vehicles, repair of commodities, catering services, accommodation services, real estate services and other services.
- The commodity breakdown derived from NACE 49, 50, 51 (land transport; water transport; air transport) distinguishes between the following services: transportation of passengers, motor insurance and other services.
- The commodity breakdown derived from NACE 53 (postal and courier activities) distinguishes between the following activities: postal activities, collection of dues and other.
- The commodity breakdown derived from all other NACE activities (different services) distinguishes between: tourism services, telecommunication services, operation of real estate, rental services, computer services, business services, communal public services, personal services, home services, research and development, education, health and social work, recreational, cultural and sporting activities, and other.

Module R

Data collected from enterprises are adjusted to exclude the part of business purchases. Some information about the IC of services is available from Module R of the SBS survey. It is obtainable for the following services: telecommunication services, supporting transport activities, activities of travel agencies, renting of machinery, equipment, computers and related activities, sewerage and refuse disposal, sanitation and similar activities, other service activities (NACE S96) and real estate services. The following groups of clients are distinguished in Module R: business firms, general government, clients abroad (export), individuals and other clients.

The calculation scheme of HFCE estimates is the following.

Column 1 (5.10, 1): Data from other sources than HBS or RT data – raw data provided by various sources

This marks a third set of sources used for HFCE estimation, other than HBS data or RT data from SBS. As mentioned above, the first column includes raw data from the SBS survey (services by NACE activities), from NA special estimations (dwelling services, purchasing of

cars, games of chance, financial services), environmental statistics (water supply, sewerage and refuse collection), energy statistics (electricity, gas and other fuels), PSFS and company data (restaurants, hotels, insurance). The sum total of this column is 18,264.3 million euros (which is 119.3% of the total HFCE).

Column 2 (5.10, 2): Adjustments to other sources – purchases of goods and services other than for HFCE

Data from enterprises are adjusted to exclude business purchases (13,378.3 million euros, which is 73.2% of column '5.10, 1'). Some information about the IC of services is available from Module R of the SBS survey (only for some turnovers). Also, the expert opinions of sellers are taken into account. See Table 5.8 above.

Column 3 (5.10, 3): Purchases of goods and services – other sources

Total '5.10, 3' = '5.10, 1' – '5.10, 2'

These data (4,886.0 million euros, 31.9% of the total HFCE) reflect the amount of goods and services purchased by households.

Column 4 (5.10, 4): Adjustments to other sources – for non-observed components

These adjustments (117.8 million euros) are for enterprises that are not covered by the data sources (for example, purchases from sole proprietors). Information for these enterprises is derived from the production side. Estimates from the production side are based on the Tax and Customs Board data (from the tax declarations on the business income of sole proprietors).

Column 5 (5.10, 5): Adjustments to other sources – for different treatment in NA (adjustments for definitions and concepts)

Subtotal '5.10, 5' = Total '5.11, 1'

See Table 5.11 below. Several adjustments (2,254.1 million euros in 2021) are made in order to obtain HFCE estimates that are consistent with ESA 2010.

Column 6 (5.10, 6): Adjustments to other sources – adjustment for non-registered units

This includes the consumption of goods and services not covered by the survey on enterprises (20.6 million euros in 2021).

Column 7 (5.10, 7): Adjustments to other sources – for consumption of illegally produced or imported goods and services

Adjustments (55.7 million euros, which is 0.4% of the total HFCE) are made for the consumption of the following illegally produced (or imported) goods and services: narcotics and prostitution. A further description of the consumption of illegally produced goods and services is presented in Chapter 7.

Column 8 (5.10, 8): HFCE domestic concept – final figures from other sources after all adjustments before reconciliation

Subtotal '5.10, 8' = '5.10, 3' + '5.10, 4' + '5.10, 5' + '5.10, 6' + '5.10, 7'

HFCE estimates according to the domestic concept (7,334.2 million euros in 2021) that are consistent with ESA 2010 are presented in this column.

Column 9 (5.10, 9): Resident households' expenditure in the rest of the world

For a short description of the residents' expenditure in the rest of the world, see Table 5.6 above (the same figures as in Column '5.6, 10' for services).

Column 10 (5.10, 10): Non-residents' expenditure on the economic territory

See Table 5.6 above (the same figures as in Column '5.6, 11' for services).

Column 11 (5.10, 11): HFCE national concept – final figures from other sources after all adjustments before reconciliation

$$\text{Total '5.10, 11'} = \text{'5.10, 8'} + \text{'5.10, 9'} - \text{'5.10, 10'}$$

Final estimates according to the national concept based on other sources are presented in this column (7,337.7 million euros, which is about 47.9% of the total HFCE).

Table 5.11 provides input for Table 5.10 in terms of adjustments for definitions and concepts needed for converting the other sources' data for NA purposes. Total adjustments from Table 5.11 (column 1) are transferred to column 5 of Table 5.10 above. Table 5.11 is designed in the same way as Table 5.7.

Table 5.11 Conversion of data from other sources than HBS and retail trade for NA purposes (by COICOP divisions and groups). Adjustments for definitions and concepts (domestic concept), 2021
(million euros)

COICOP codes	COICOP	Adjustments to basic data for definitions and concepts, total	of which						
			Production for own final consumption	Goods and services received as income in kind by employees	Other adjustments for NA concepts	of which			
						imputed rents, insurance services, clothing and food in the armed forces	gifts and transfers	licenses and fees	others
A	B	1=2+3+4	2	3	4=5+6+7+8	5	6	7	8
	HFCE – national concept								
	HFCE – domestic concept	2,254.1	10.7	103.5	2,140.0	2,085.3		27.6	27.0
04.	Housing, water, electricity, gas and other fuels	2,096.0	10.7		2,085.3	2,085.3			
	goods	10.7	10.7						

COICOP codes	COICOP	Adjustments to basic data for definitions and concepts, total	of which						
			Production for own final consumption	Goods and services received as income in kind by employees	Other adjustments for NA concepts	of which			
						imputed rents, insurance services, clothing and food in the armed forces	gifts and transfers	licenses and fees	others
	services	2,085.3			2,085.3	2,085.3			
04.1	Actual rentals for housing								
04.2	Imputed rentals for housing	2,085.3			2,085.3	2,085.3			
04.5	Electricity, gas and other fuels	10.7	10.7						
06.	Health	5.9		5.9					
	goods								
	services	5.9		5.9					
06.2	Out-patient services	5.9		5.9					
07.	Transport	56.9		43.4	13.5			6.0	7.4
	goods								
	services	56.9		43.4	13.5			6.0	7.4
07.2	Operation of personal transport equipment	46.9		40.9	6.0			6.0	
07.3	Transport services	10.0		2.6	7.4				7.4
08.	Communication	11.8		11.8					
	goods								
	services	11.8		11.8					
08.3	Telephone and telefax services	11.8		11.8					
09.	Recreation and culture	18.6		18.6					
	goods								
	services	18.6		18.6					
09.4	Recreational and cultural services	17.7		17.7					
09.6	Package holidays	0.8		0.8					
10.	Education	1.3		1.3					
10.5	Education not	1.3		1.3					

COICOP codes	COICOP	Adjustments to basic data for definitions and concepts, total	of which						
			Production for own final consumption	Goods and services received as income in kind by employees	Other adjustments for NA concepts	of which			
						imputed rents, insurance services, clothing and food in the armed forces	gifts and transfers	licenses and fees	others
	definable by level								
11.	Restaurants and hotels	41.4		21.8	19.6				19.6
11.1	Catering services	32.9		17.0	16.0				16.0
11.2	Accommodation services	8.5		4.9	3.6				3.6
12.	Miscellaneous goods and services	22.2		0.6	21.6			21.6	
	goods								
	services	22.2		0.6	21.6			21.6	
12.5	Insurance	0.6		0.6					
12.7	Other services n.e.c.	21.6			21.6			21.6	
	Total	2,254.1	10.7	103.5	2,140.0	2,085.3		27.6	27.0
	goods	10.7	10.7						
	services	2,243.4		103.5	2,140.0	2,085.3		27.6	27.0

Column 1 (5.11, 1): Total adjustments to basic data for definitions and concepts

Total '5.11, 1' = '5.10, 5'; Total '5.11, 1' = '5.11, 2' + '5.11, 3' + '5.11, 4'

In this column, several adjustments (imputed rentals etc.) are made in order to obtain HFCE estimates that are consistent with ESA 2010. The sum total of this column is 2,254.1 million euros.

Column 2 (5.11, 2): Adjustment for consumption of households' own production

This column has already been described in Table 5.7 (in Column '5.7, 2') above. In this table, an adjustment is made for firewood: 10.7 million euros (0.5% of Column '5.11, 1').

Column 3 (5.11, 3): Adjustment for goods and services received as wages and salaries in kind by employees

Adjustments (103.5 million euros, i.e. 4.6% of Column '5.11, 1') are to be made for the consumption of goods and services received as wages and salaries in kind by employees, if they are not covered by other sources. The relevant items for this column have already been described in Column '5.7, 3' above.

Column 4 (5.11, 4): All other adjustments for definitions and concepts (compliance with NA rules)

Subtotal '5.11, 4' = '5.11, 5' + '5.11, 6' + '5.11, 7' + '5.11, 8'

The sum total of this column is 2,140.0 million euros (94.9% of Column '5.11, 1').

Column 5 (5.11, 5): Special adjustments such as imputed rents, insurance services, clothing and food in the armed forces

See Table 5.7 above. Adjustment for the imputed rentals of owner-occupiers is specified (2,085.3 million euros, i.e. 92.5% of Column '5.11, 1').

Column 6 (5.11, 6): Gifts and transfers in kind from the rest of the world to households, net

There are no adjustments in this column. In Estonia, all charity transfers go through NPISH. Therefore, all these transactions are not part of HFCE.

Column 7 (5.11, 7): Licenses and fees for services provided by government to households

See the corresponding column in Tables 5.7 and 5.9. In this column, adjustments (27.6 million euros, which is about 0.2% of HFCE) are made for HFCE based on the information from the PSFS.

Column 8 (5.11, 8): Other adjustments for NA definitions and concepts

See the corresponding column in Tables 5.7 and 5.9. Adjustments are made for tips for people who work in taxi transport, restaurants, cafes and the like and in accommodation enterprises (the total amount is 27.0 million euros, which is about 1.2% of Column '5.11, 1'). The amount of tips is much larger compared to the amount in '5.7, 8' in the HBS, because raw data from the HBS partly cover tip money, while the raw data of enterprises do not. See the description above (Table 5.7). Further information about tips is available in Sections 7.1.3.5.2 and 4.6.2.

Expenditures of residents abroad and of non-residents on the domestic territory

HFCE may take place on the domestic territory or abroad. Therefore, two different HFCE figures are calculated: HFCE according to the domestic concept (all expenditures by residents and non-residents made on the economic territory) and HFCE according to the national concept (all expenditures made by residents in the economic territory and in the rest of the world). The calculations are made at the 4-digit COICOP level, but, in order to avoid inserting large tables here, only the results at the 3-digit COICOP level are presented (see Table 5.12).

Table 5.12 Expenditures of residents in the rest of the world and expenditures of non-residents on the economic territory, 2021
(million euros)

COICOP codes	COICOP	Resident households' expenditure in the rest of the world		Non-residents' expenditure on the economic territory	
		Value, million euros	%	Value, million euros	%
	HFCE – national concept				
	HFCE – domestic concept	537.8	100.0	532.4	100.0

COICOP codes	COICOP	Resident households' expenditure in the rest of the world		Non-residents' expenditure on the economic territory	
		Value, million euros	%	Value, million euros	%
01.	Food and non-alcoholic beverages	23.6	4.4	22.7	4.3
01.1	Food	21.9	4.1	21.1	4.0
01.2	Non-alcoholic beverages	1.8	0.3	1.7	0.3
02.	Alcoholic beverages, tobacco and narcotics	3.6	0.7	41.8	7.9
02.1	Alcoholic beverages	2.3	0.4	26.8	5.0
02.2	Tobacco	1.2	0.2	5.5	1.0
02.3	Narcotics			9.5	1.8
03.	Clothing and footwear	33.6	6.2	43.7	8.2
	goods	33.1	6.1	43.6	8.2
	services	0.5	0.1	0.1	0.0
03.1	Clothing	25.0	4.6	32.6	6.1
	goods	24.7	4.6	32.6	6.1
	services	0.3	0.1	0.0	0.0
03.2	Footwear	8.6	1.6	11.1	2.1
	goods	8.4	1.6	11.1	2.1
	services	0.2	0.0	0.0	0.0
04.	Housing, water, electricity, gas and other fuels	42.7	7.9	107.7	20.2
	goods				
	services	42.7	7.9	107.7	20.2
04.1	Actual rentals for housing	28.3	5.3	45.1	8.5
04.2	Imputed rentals for housing	14.4	2.7	62.6	11.8
05.	Furnishings, household equipment and routine maintenance of the house	17.7	3.3	6.9	1.3
	goods	17.7	3.3	6.8	1.3
	services			0.1	0.0
05.2	Household textiles	3.3	0.6	1.3	0.2
05.3	Household appliances	1.4	0.3	0.5	0.1
05.4	Glassware, tableware and household utensils	4.2	0.8	1.6	0.3
05.5	Tools and equipment for house and garden				
05.6	Goods and services for routine household maintenance	8.8	1.6	3.5	0.7
06.	Health	4.2	0.8	14.1	2.7
	goods	3.0	0.6	10.0	1.9
	services	1.2	0.2	4.1	0.8
06.1	Medical products, appliances and equipment	3.0	0.6	10.0	1.9
06.2	Out-patient services	1.2	0.2	4.0	0.8
06.3	Hospital services	0.0	0.0	0.1	0.0
07.	Transport	88.6	16.5	50.7	9.5
	goods	10.2	1.9	1.1	0.2
	services	78.4	14.6	49.6	9.3

COICOP codes	COICOP	Resident households' expenditure in the rest of the world		Non-residents' expenditure on the economic territory	
		Value, million euros	%	Value, million euros	%
07.2	Operation of personal transport equipment	10.2	1.9	2.3	0.4
07.3	Transport services	78.4	14.6	48.5	9.1
08.	Communication	46.2	8.6	5.8	1.1
	goods	3.4	0.6	1.3	0.2
	services	42.9	8.0	4.5	0.9
08.1	Postal services	1.2	0.2	0.1	0.0
08.2	Telephone and telefax equipment	3.4	0.6	1.3	0.2
08.3	Telephone and telefax services	41.7	7.8	4.4	0.8
09.	Recreation and culture	97.5	18.1	48.3	9.1
	goods	40.8	7.6	26.9	5.1
	services	56.7	10.5	21.4	4.0
09.1	Audio-visual, photographic and information processing equipment	7.0	1.3	2.7	0.5
09.2	Other major durables for recreation and culture	0.7	0.1	0.3	0.1
09.3	Other recreational items and equipment, garden products and pets	21.8	4.0	8.3	1.6
09.4	Recreational and cultural services	56.7	10.5	19.4	3.6
09.5	Newspapers, books and stationery	11.3	2.1	15.6	2.9
09.6	Package holidays			2.0	0.4
10.	Education	18.8	3.5	24.9	4.7
10.4	Tertiary education	7.4	1.4	6.8	1.3
10.5	Education not definable by level	11.5	2.1	18.1	3.4
11.	Restaurants and hotels	129.6	24.1	154.4	29.0
11.1	Catering services	91.3	17.0	116.4	21.9
11.2	Accommodation services	38.3	7.1	37.9	7.1
12.	Miscellaneous goods and services	31.6	5.9	11.3	2.1
	goods	18.6	3.5	7.1	1.3
	services	13.0	2.4	4.1	0.8
12.1	Personal care	24.6	4.6	6.3	1.2
12.2	Prostitution			2.4	0.5
12.3	Personal effects n.e.c.	5.2	1.0	2.0	0.4
12.4	Social protection				
12.5	Insurance				
12.6	Financial services n.e.c.	0.0	0.0	0.2	0.0
12.7	Other services n.e.c.	1.8	0.3	0.3	0.1
	Total	537.8	100.0	532.4	100.0
	goods	153.9	28.6	161.4	30.3
	services	383.9	71.4	371.0	69.7

The total figures are obtained from the BOP estimated by Eesti Pank. The expenditures of resident households incurred abroad and those of non-residents on the domestic territory are allocated to a commodity group using the information from tourist surveys (on non-resident persons visiting Estonia and resident persons staying abroad). The survey of the expenditures

of non-residents gives a distribution of the structure of their expenditures by seven expenditure groups. These surveys are described in Chapter 10.

Residents' expenditures on personal travel are totally included in HFCE. Residents' expenditures on business travel are included partially, covering only expenses not related to business, for example, expenses on food, drinks, etc. To deduct the part of business-related expenditures by business travellers, information from the Tourism Survey is used. The final balancing of these expenditures is done using the supply and use tables framework and making corrections if necessary.

Commodity flow based estimates for HFCE

Finally, after the supply and use table (SUT) based on the classification of products by activities (CPA) is available, the HFCE estimates are derived from it according to the commodity flow method (see Table 5.13). These data, after being recast in terms of the COICOP classification (see Table 5.14), form the final HFCE estimates (see Table 5.15 for a summary table).

Table 5.13 Commodity flow estimates by CPA, 2021
(million euros)

CPA (P64) (relevant items)	Output of goods and services at basic prices	Imports – CIF	Supply at basic prices	Transport margin	Trade margin	Taxes minus subsidies on products	Exports – FOB	Supply at purchaser's prices (less exports)	Supply coefficient to HFCE	HFCE domestic concept
A	1	2	3=1+2	4	5	6	7	8=3+4+5+6-7	9=10/8	10
01	1,081.8	340.9	1,422.7	291.4	55.1	404.3	687.5	0.7	489.7	1,081.8
02	985.5	69.0	1,054.5	172.5	4.2	114.9	245.7	0.1	25.5	985.5
03	72.6	59.3	131.8	15.3	1.9	51.9	76.5	0.2	14.7	72.6
05_09	343.8	212.8	556.7	85.5	6.9	314.9	305.3	0.0	12.5	343.8
10_12	1,935.2	1,366.6	3,301.8	1,131.7	1,059.7	1,099.6	3,558.0	1.0	3,694.9	1,935.2
13_15	513.6	767.0	1,280.6	606.0	187.5	582.7	1,560.5	0.7	1,104.4	513.6
16	3,596.0	864.5	4,460.5	395.6	20.9	2,476.8	1,281.0	0.0	35.6	3,596.0
17	271.5	317.8	589.4	85.4	16.3	281.5	419.5	0.2	77.3	271.5
18	225.5	1.6	227.0	0.0	5.5	85.2	7.1	1.2	8.7	225.5
19	415.2	851.7	1,266.8	423.2	602.7	337.4	1,877.5	0.3	656.3	415.2
20	541.3	1,418.5	1,959.8	373.3	78.0	1,124.8	1,869.9	0.2	344.5	541.3
21	61.2	674.9	736.1	211.0	48.9	110.5	934.8	0.5	459.2	61.2
22	541.0	761.9	1,302.9	121.8	28.0	475.5	911.8	0.1	92.4	541.0
23	618.7	331.8	950.5	200.9	29.9	333.0	562.6	0.2	87.0	618.7
24	123.8	1,287.3	1,411.1	122.1	10.8	457.8	1,420.3	0.0	0.0	123.8
25	1,611.5	838.8	2,450.3	254.9	37.8	971.0	1,131.5	0.1	60.8	1,611.5
26	1,016.6	1,787.9	2,804.5	327.2	68.4	2,237.6	2,183.5	0.1	314.7	1,016.6
27	896.0	1,021.5	1,917.5	132.6	49.9	1,046.4	1,204.0	0.2	201.5	896.0
28	643.4	1,697.7	2,341.1	246.1	14.2	1,159.9	1,958.0	0.0	12.9	643.4
29	525.9	1,931.1	2,457.0	403.5	75.6	1,167.4	2,410.2	0.1	326.5	525.9
30	117.0	155.8	272.8	62.9	9.2	121.9	227.9	0.2	45.7	117.0
31_32	940.7	860.5	1,801.1	434.6	116.6	959.6	1,411.7	0.3	485.3	940.7
33	645.2	104.4	749.6	-5.5	16.1	250.4	115.0	0.0	1.0	645.2
35	1,590.4	662.2	2,252.7	0.0	240.6	479.3	902.8	0.8	727.0	1,590.4
36	133.4	0.0	133.4	0.0	20.1	0.0	20.1	4.7	94.2	133.4

CPA (P64) (relevant items)	Output of goods and services at basic prices	Imports – CIF	Supply at basic prices	Transport margin	Trade margin	Taxes minus subsidies on products	Exports – FOB	Supply at purchaser's prices (less exports)	Supply coefficient to HFCE	HFCE domestic concept
37_39	785.8	161.7	947.5	89.4	13.9	415.1	264.9	0.2	49.2	785.8
41_43	4,853.9	62.8	4,916.7	0.0	460.8	393.9	523.6	0.0	7.3	4,853.9
45	895.0	17.7	912.7	-390.6	28.6	49.7	-344.4	-0.5	157.4	895.0
46	3,449.9	106.3	3,556.3	-3,270.2	0.1	104.3	-3,163.8	0.0	0.0	3,449.9
47	2,189.9	0.0	2,189.9	-2,189.9	0.0	0.0	-2,189.9	0.0	0.0	2,189.9
49	1,995.3	476.3	2,471.6	-431.0	-42.8	441.5	2.5	110.7	278.9	1,995.3
50	278.8	272.8	551.6	0.0	1.6	66.0	274.4	0.1	37.6	278.8
51	164.2	80.2	244.4	0.0	0.1	127.9	80.2	0.3	24.5	164.2
52	2,656.6	635.4	3,292.0	0.0	7.7	1,478.9	643.2	0.0	20.9	2,656.6
53	308.7	63.9	372.7	0.0	6.9	94.7	70.8	0.8	59.7	308.7
55_56	876.8	41.4	918.2	0.0	133.7	5.0	175.2	4.8	833.4	876.8
58	205.6	73.8	279.4	89.7	27.7	33.7	191.2	0.9	180.9	205.6
59_60	218.1	61.9	280.0	2.2	5.8	37.7	70.0	1.0	69.5	218.1
61	656.4	185.4	841.8	0.0	52.6	174.3	238.0	1.3	297.9	656.4
62_63	3,448.3	2,102.0	5,550.3	0.0	44.3	2,243.6	2,146.3	0.0	73.8	3,448.3
64	1,181.5	115.9	1,297.4	0.0	4.8	119.9	120.7	3.2	385.2	1,181.5
65	238.2	27.7	265.9	0.0	0.0	8.8	27.7	4.2	117.1	238.2
66	369.6	13.5	383.2	0.0	8.8	99.3	22.3	2.0	44.4	369.6
68	4,821.0	6.5	4,827.5	0.0	138.7	62.3	145.2	17.7	2,563.0	4,821.0
69_70	1,274.2	1,317.9	2,592.1	0.0	15.4	521.6	1,333.3	0.0	25.2	1,274.2
71	543.1	52.9	596.1	1.2	9.8	88.8	63.9	0.4	25.3	543.1
72	554.1	25.7	579.8	0.0	3.2	77.1	28.9	4.1	118.3	554.1
73	674.9	279.2	954.1	0.0	6.6	369.3	285.8	0.0	0.0	674.9
74_75	869.6	22.6	892.2	0.0	9.8	320.1	32.4	1.2	39.1	869.6
77	635.6	242.5	878.1	0.0	11.2	128.6	253.7	0.3	75.6	635.6
78	354.0	9.6	363.6	0.0	1.3	155.6	10.8	0.2	2.6	354.0
79	101.0	0.0	101.0	0.0	3.8	17.2	3.8	18.0	69.2	101.0
80_82	841.2	2.7	843.9	0.0	47.1	106.3	49.8	0.3	15.8	841.2

CPA (P64) (relevant items)	Output of goods and services at basic prices	Imports – CIF	Supply at basic prices	Transport margin	Trade margin	Taxes minus subsidies on products	Exports – FOB	Supply at purchaser's prices (less exports)	Supply coefficient to HFCE	HFCE domestic concept
84	2,422.3	8.9	2,431.1	0.0	0.0	26.0	8.9	260.4	2,308.2	2,422.3
85	1,732.7	10.3	1,743.0	0.0	18.8	11.7	29.1	56.2	1,636.6	1,732.7
86	1,827.7	16.6	1,844.3	0.0	4.3	14.9	20.9	80.8	1,684.9	1,827.7
87_88	270.8	0.0	270.8	0.0	0.1	1.0	0.1	2,028.0	266.1	270.8
90_92	472.6	6.6	479.2	5.7	48.1	20.3	60.4	7.0	420.9	472.6
93	450.4	7.9	458.2	0.0	24.5	24.1	32.4	12.5	403.7	450.4
94	236.8	0.0	236.8	0.0	0.3	0.6	0.3	623.3	197.3	236.8
95	65.4	0.0	65.4	0.0	5.4	4.8	5.4	0.9	4.8	65.4
96	260.7	0.0	260.7	1.2	26.3	20.9	27.5	8.0	221.1	260.7
97_98	16.2	0.0	16.2	0.0	0.0	0.0	0.0	-	16.2	16.2
Total	62,643.7	24,894.1	87,537.8	0.0	3,934.5	24,509.5	28,828.5	0.8	22,103.8	62,643.7

In order to regroup CPA to COICOP, there is a cross-classification table provided (see Table 5.14). A benchmark table for the year 2021 is composed on the basis of the 7-digit COICOP level (the most detailed level of 2020 HBS data available in Estonia) and on the basis of product classification. The correspondence table between COICOP and CPA was developed by the NA team. The final version of the correspondence table between CPA and COICOP is available at the 4-digit COICOP level and at the 4-digit CPA level (some items at the 5-, 6- or 7-digit CPA level).

Table 5.14 below shows data at the 2-digit COICOP and CPA level.

Table 5.14 Transformation of commodity flow estimates from CPA to COICOP (divisions and groups), 2021 (million euros)

Relevant CPA items	HFCE (DC)	Relevant COICOP items											
		01	02	03	04	05	06	07	08	09	10	11	12
A	1=2+3+...+13	2	3	4	5	6	7	8	9	10	11	12	13
01	489.7	420.7								69.0			
02	25.5	0.9			24.6								

Relevant CPA items	HFCE (DC)	Relevant COICOP items											
		01	02	03	04	05	06	07	08	09	10	11	12
A	1=2+3+...+13	2	3	4	5	6	7	8	9	10	11	12	13
03	14.7	14.6								0.1			
05_09	12.5				12.5					0.0			
10_12	3,692.1	2,507.2	1,090.7							94.2			
13_15	1,103.8			908.7		99.7	2.8	0.8		22.4			69.4
16	35.6			0.2	7.8	20.6				6.2			0.7
17	77.2				1.6	20.1				12.4			43.1
18	8.7									0.0			8.7
19	656.3				17.4			638.9					
20	339.8	0.8	52.3		3.3	20.4		20.1		5.0			237.8
21	270.1						233.6			8.2			28.3
22	92.4			0.2	0.7	19.1	0.4	60.4		11.7			0.1
23	87.0				20.8	53.3		8.9		3.9			0.1
25	60.8				0.1	50.9		1.2		6.8			1.8
26	314.7				3.3	2.5	0.3		55.6	230.8			22.2
27	201.5					198.2		0.3					3.0
28	12.9				0.6	12.1		0.1		0.1			
29	326.5							326.5		0.1			
30	37.6					0.5	1.0	23.8		5.5			6.9
31_32	467.5			1.2		220.1	47.2			137.3			61.8
33	1.0				0.0	0.9				0.1			
35	722.8				722.8								
36	94.2				94.2								
37_39	49.2				49.2								
41_43	7.3				7.3								
45	157.4							157.2		0.2			
49	157.8							157.8					
50	25.0							25.0					

Relevant CPA items	HFCE (DC)	Relevant COICOP items											
		01	02	03	04	05	06	07	08	09	10	11	12
A	1=2+3+...+13	2	3	4	5	6	7	8	9	10	11	12	13
51	24.5							24.5					
52	6.6							2.9		3.7			
53	59.7								59.7				
55_56	833.4											833.4	
58	180.9									180.9			0.0
59_60	28.7									28.2			0.5
61	297.9								297.9				
62_63	6.9												6.9
64	385.2												385.2
65	117.1												117.1
66	44.4												44.4
68	2,412.2				2,407.3							4.9	
69_70	13.5												13.5
71	17.3							16.7					0.5
72	0.2												0.2
74_75	39.1				6.3					26.4			6.4
77	75.6			2.3		15.3	0.3	43.5	0.0	13.9			0.3
78	2.6												2.6
79	69.1							10.7		58.4			
80_82	15.8				10.3	0.7							4.8
84	36.6							6.0					30.5
85	110.4							17.8		15.2	60.8		16.7
86	265.9						262.7						3.2
87_88	89.2												89.2
90_92	245.9					6.7				239.2			
93	140.6						0.1	0.5	0.2	139.5	0.0	0.3	
95	4.8			0.6		1.7			0.3	1.7			0.6

Relevant CPA items	HFCE (DC)	Relevant COICOP items											
		01	02	03	04	05	06	07	08	09	10	11	12
A	1=2+3+...+13	2	3	4	5	6	7	8	9	10	11	12	13
96	217.6			4.4		3.7	17.5			7.3			184.7
97_98	16.2					11.8							4.4
Total (DC)	15,299.6	2,944.2	1,143.0	917.6	3,390.0	758.4	565.8	1,543.7	413.7	1,328.3	60.8	838.6	1,395.7
Resident households' expenditure in the rest of the world	537.8	23.6	3.6	33.6	42.7	17.7	4.2	88.6	46.2	97.5	18.8	129.6	31.6
Non- residents' expenditure on the economic territory	-532.4	-22.7	-41.8	-43.7	-107.7	-6.9	-14.1	-50.7	-5.8	-48.3	-24.9	-154.4	-11.3
Total (NC)	15,305.1	2,945.1	1,104.7	907.5	3,325.0	769.2	555.9	1,581.6	454.1	1,377.5	54.8	813.8	1,416.0

Final independent and final reconciled HFCE estimate

The following describes the estimation methods used and adjustments made by COICOP groups in the final HFCE estimate before reconciliation.

Table 5.15 below presents three independent HFCE estimates (Columns 1, 2, 3), the “best” of these estimates selected before reconciliation (Column 4), the reconciled (CF-based) estimate (Column 5) and the final NA estimate (Column 9).

Table 5.15 Summary table for final estimate of HFCE (domestic concept), 2021
(million euros)

COICOP codes	COICOP	HFCE – domestic concept								HFCE – NC
		HBS-based estimates	Retail sales based estimates	HFCE estimates based on other sources	Best estimate – before reconciliation	CF-based (reconciled) estimate	Column 6 as % of column 5	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	NA estimate actually used (absolute size)
A	B	1	2	3	4	5	6=5/4	7	8	9=5+7-8
	HFCE – national concept									15,305.1
	HFCE – domestic concept	12,202.0	8,569.4	7,334.2	15,299.6	15,299.6	100.0	537.8	532.4	
01.	Food and non-alcoholic beverages	2,944.2	2,939.5		2,944.2	2,944.2	100.0	23.6	22.7	2,945.1
01.1	Food	2,717.2	2,714.7		2,717.2	2,717.2	100.0	21.9	21.1	2,718.0
01.2	Non-alcoholic beverages	227.0	224.8		227.0	227.0	100.0	1.8	1.7	227.1
02.	Alcoholic beverages, tobacco and narcotics	474.4	1,090.7	52.3	1,143.0	1,143.0	100.0	3.6	41.8	1,104.7
02.1	Alcoholic beverages	307.6	705.3		705.3	705.3	100.0	2.3	26.8	680.8
02.2	Tobacco	114.5	385.4		385.4	385.4	100.0	1.2	5.5	381.1

COICOP codes	COICOP	HFCE – domestic concept								HFCE – NC
		HBS-based estimates	Retail sales based estimates	HFCE estimates based on other sources	Best estimate – before reconciliation	CF-based (reconciled) estimate	Column 6 as % of column 5	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	NA estimate actually used (absolute size)
A	B	1	2	3	4	5	6=5/4	7	8	9=5+7-8
02.3	Narcotics	52.3		52.3	52.3	52.3	100.0		9.5	42.8
03.	Clothing and footwear	513.7	906.2	11.8	917.6	917.6	100.0	33.6	43.7	907.5
	goods	502.4	906.2		906.2	906.2	100.0	33.1	43.6	895.7
	services	11.4		11.8	11.4	11.4	100.0	0.5	0.1	11.8
03.1	Clothing	393.1	728.5	8.3	736.7	736.7	100.0	25.0	32.6	729.1
	goods	384.8	728.5		728.5	728.5	100.0	24.7	32.6	720.6
	services	8.2		8.3	8.2	8.2	100.0	0.3	0.0	8.5
03.2	Footwear	120.6	177.7	3.5	180.9	180.9	100.0	8.6	11.1	178.3
	goods	117.5	177.7		177.7	177.7	100.0	8.4	11.1	175.1
	services	3.1		3.5	3.1	3.1	100.0	0.2	0.0	3.3
04.	Housing, water, electricity, gas and other fuels	3,393.1	205.6	3,408.6	3,390.0	3,390.0	100.0	42.7	107.7	3,325.0
	goods	770.8	205.6	883.5	864.8	864.8	100.0			864.8
	services	2,622.3		2,525.2	2,525.2	2,525.2	100.0	42.7	107.7	2,460.2
04.1	Actual rentals for housing	269.1		322.0	322.0	322.0	100.0	28.3	45.1	305.1
04.2	Imputed rentals for housing	2,133.5		2,085.3	2,085.3	2,085.3	100.0	14.4	62.6	2,037.2
04.3	Maintenance and repair of the dwelling	169.3	132.6	34.5	34.5	34.5	100.0			34.5
	goods	42.7	132.6	27.2	27.2	27.2	100.0			27.2
	services	126.5		7.3	7.3	7.3	100.0			7.3

COICOP codes	COICOP	HFCE – domestic concept								HFCE – NC
		HBS-based estimates	Retail sales based estimates	HFCE estimates based on other sources	Best estimate – before reconciliation	CF-based (reconciled) estimate	Column 6 as % of column 5	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	NA estimate actually used (absolute size)
A	B	1	2	3	4	5	6=5/4	7	8	9=5+7-8
04.4	Water supply and miscellaneous services relating to the dwelling	201.2		161.6	161.6	161.6	100.0			161.6
	goods	108.1		51.0	51.0	51.0	100.0			51.0
	services	93.1		110.6	110.6	110.6	100.0			110.6
04.5	Electricity, gas and other fuels	620.1	73.0	805.3	786.6	786.6	100.0			786.6
05.	Furnishings, household equipment and routine maintenance of the house	641.2	734.9	28.2	758.4	758.4	100.0	17.7	6.9	769.2
	goods	623.1	734.9	5.3	740.2	740.2	100.0	17.7	6.8	751.1
	services	18.2		22.9	18.2	18.2	100.0		0.1	18.1
05.1	Furniture and furnishings, carpets and other floor coverings	229.2	274.9	0.5	275.4	275.4	100.0			275.4
	goods	228.7	274.9		274.9	274.9	100.0			274.9
	services	0.5		0.5	0.5	0.5	100.0			0.5
05.2	Household textiles	46.4	67.6		67.6	67.6	100.0	3.3	1.3	69.6
05.3	Household appliances	118.0	190.2	2.0	191.3	191.3	100.0	1.4	0.5	192.1
	goods	116.9	190.2		190.2	190.2	100.0	1.4	0.5	191.1

COICOP codes	COICOP	HFCE – domestic concept								HFCE – NC
		HBS-based estimates	Retail sales based estimates	HFCE estimates based on other sources	Best estimate – before reconciliation	CF-based (reconciled) estimate	Column 6 as % of column 5	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	NA estimate actually used (absolute size)
A	B	1	2	3	4	5	6=5/4	7	8	9=5+7-8
	services	1.1		2.0	1.1	1.1	100.0			1.1
05.4	Glassware, tableware and household utensils	48.5	69.1		69.1	69.1	100.0	4.2	1.6	71.7
05.5	Tools and equipment for house and garden	88.0	62.3	5.3	67.6	67.6	100.0			67.6
05.6	Goods and services for routine household maintenance	111.1	70.9	20.4	87.5	87.5	100.0	8.8	3.5	92.8
	goods	94.5	70.9		70.9	70.9	100.0	8.8	3.4	76.3
	services	16.6		20.4	16.6	16.6	100.0		0.1	16.5
06.	Health	511.1	285.2	280.6	565.8	565.8	100.0	4.2	14.1	555.9
	goods	270.3	285.2		285.2	285.2	100.0	3.0	10.0	278.2
	services	240.8		280.6	280.6	280.6	100.0	1.2	4.1	277.7
06.1	Medical products, appliances and equipment	270.3	285.2		285.2	285.2	100.0	3.0	10.0	278.2
06.2	Out-patient services	196.9		196.9	196.9	196.9	100.0	1.2	4.0	194.0
06.3	Hospital services	43.9		83.7	83.7	83.7	100.0	0.0	0.1	83.7
07.	Transport	1,350.6	1,081.9	757.8	1,543.7	1,543.7	100.0	88.6	50.7	1,581.6
	goods	1,028.0	1,081.9	292.7	1,080.9	1,080.9	100.0	10.2	1.1	1,090.0
	services	322.6		465.1	462.7	462.7	100.0	78.4	49.6	491.5

COICOP codes	COICOP	HFCE – domestic concept								HFCE – NC
		HBS-based estimates	Retail sales based estimates	HFCE estimates based on other sources	Best estimate – before reconciliation	CF-based (reconciled) estimate	Column 6 as % of column 5	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	NA estimate actually used (absolute size)
A	B	1	2	3	4	5	6=5/4	7	8	9=5+7-8
07.1	Purchase of vehicles	638.2	312.6	292.7	311.6	311.6	100.0			311.6
07.2	Operation of personal transport equipment	634.0	769.4	246.5	1,013.6	1,013.6	100.0	10.2	2.3	1,021.5
	goods	389.8	769.4		769.4	769.4	100.0	10.2	1.1	778.5
	services	244.2		246.5	244.2	244.2	100.0		1.2	243.0
07.3	Transport services	78.4		218.6	218.6	218.6	100.0	78.4	48.5	248.5
08.	Communication	381.1	55.9	357.8	413.7	413.7	100.0	46.2	5.8	454.1
	goods	42.7	55.9		55.9	55.9	100.0	3.4	1.3	58.0
	services	338.3		357.8	357.8	357.8	100.0	42.9	4.5	396.1
08.1	Postal services	12.6		59.7	59.7	59.7	100.0	1.2	0.1	60.8
08.2	Telephone and telefax equipment	42.7	55.9		55.9	55.9	100.0	3.4	1.3	58.0
08.3	Telephone and telefax services	325.7		298.1	298.1	298.1	100.0	41.7	4.4	335.3
09.	Recreation and culture	866.7	797.9	546.1	1,328.3	1,328.3	100.0	97.5	48.3	1,377.5
	goods	456.9	797.9	3.4	797.9	797.9	100.0	40.8	26.9	811.8
	services	409.8		542.7	530.4	530.4	100.0	56.7	21.4	565.7
09.1	Audio-visual, photographic and information processing equipment	98.5	271.9	2.1	273.4	273.4	100.0	7.0	2.7	277.7

COICOP codes	COICOP	HFCE – domestic concept								HFCE – NC
		HBS-based estimates	Retail sales based estimates	HFCE estimates based on other sources	Best estimate – before reconciliation	CF-based (reconciled) estimate	Column 6 as % of column 5	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	NA estimate actually used (absolute size)
A	B	1	2	3	4	5	6=5/4	7	8	9=5+7-8
	goods	96.9	271.9		271.9	271.9	100.0	7.0	2.7	276.2
	services	1.5		2.1	1.5	1.5	100.0		0.0	1.5
09.2	Other major durables for recreation and culture	14.2	9.5	4.4	13.9	13.9	100.0	0.7	0.3	14.4
	goods	9.9	9.5		9.5	9.5	100.0	0.7	0.3	10.0
	services	4.4		4.4	4.4	4.4	100.0	0.0	0.0	4.4
09.3	Other recreational items and equipment, garden products and pets	262.8	342.9	20.5	359.1	359.1	100.0	21.8	8.3	372.6
	goods	246.5	342.9	3.4	342.9	342.9	100.0	21.8	8.3	356.3
	services	16.3		17.1	16.3	16.3	100.0			16.3
09.4	Recreational and cultural services	284.4		459.9	448.9	448.9	100.0	56.7	19.4	486.2
09.5	Newspapers, books and stationery	103.6	173.6		173.6	173.6	100.0	11.3	15.6	169.4
09.6	Package holidays	103.2		59.2	59.2	59.2	100.0		2.0	57.3
10.	Education	60.8		108.2	60.8	60.8	100.0	18.8	24.9	54.8
10.1	Pre-primary and primary education	23.8		46.9	23.8	23.8	100.0			23.8
10.2	Secondary education	3.6		9.2	3.6	3.6	100.0			3.6

COICOP codes	COICOP	HFCE – domestic concept								HFCE – NC
		HBS-based estimates	Retail sales based estimates	HFCE estimates based on other sources	Best estimate – before reconciliation	CF-based (reconciled) estimate	Column 6 as % of column 5	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	NA estimate actually used (absolute size)
A	B	1	2	3	4	5	6=5/4	7	8	9=5+7-8
10.3	Post-secondary non-tertiary education	0.6		2.3	0.6	0.6	100.0			0.6
10.4	Tertiary education	7.9		21.5	7.9	7.9	100.0	7.4	6.8	8.6
10.5	Education not definable by level	24.8		28.4	24.8	24.8	100.0	11.5	18.1	18.2
11.	Restaurants and hotels	395.1		838.6	838.6	838.6	100.0	129.6	154.4	813.8
11.1	Catering services	331.3		685.2	685.2	685.2	100.0	91.3	116.4	660.1
11.2	Accommodation services	63.8		153.4	153.4	153.4	100.0	38.3	37.9	153.7
12.	Miscellaneous goods and services	669.9	471.7	944.3	1,395.7	1,395.7	100.0	31.6	11.3	1,416.0
	goods	223.9	471.7	4.2	475.8	475.8	100.0	18.6	7.1	487.3
	services	446.0		940.1	919.9	919.9	100.0	13.0	4.1	928.8
12.1	Personal care	305.2	322.8	144.5	467.3	467.3	100.0	24.6	6.3	485.6
	goods	160.6	322.8		322.8	322.8	100.0	13.4	5.1	331.0
	services	144.5		144.5	144.5	144.5	100.0	11.2	1.2	154.6
12.2	Prostitution	3.4		3.4	3.4	3.4	100.0		2.4	1.0
12.3	Personal effects n.e.c.	63.2	148.9	4.2	153.1	153.1	100.0	5.2	2.0	156.2
12.4	Social protection	113.5		133.7	113.5	113.5	100.0			113.5
12.5	Insurance	100.4		80.1	80.1	80.1	100.0			80.1

COICOP codes	COICOP	HFCE – domestic concept								HFCE – NC
		HBS-based estimates	Retail sales based estimates	HFCE estimates based on other sources	Best estimate – before reconciliation	CF-based (reconciled) estimate	Column 6 as % of column 5	Resident households' expenditure in the rest of the world	Non-residents' expenditure on the economic territory	NA estimate actually used (absolute size)
A	B	1	2	3	4	5	6=5/4	7	8	9=5+7-8
12.6	Financial services n.e.c.	4.9		466.6	466.6	466.6	100.0	0.0	0.2	466.4
12.7	Other services n.e.c.	79.3		111.7	111.7	111.7	100.0	1.8	0.3	113.2
	Total	12,202.0	8,569.4	7,334.2	15,299.6	15,299.6	100.0	537.8	532.4	15,305.1
	goods	7,336.8	8,569.4	1,241.3	9,294.1	9,294.1	100.0	153.9	161.4	9,286.6
	services	4,865.2		6,092.9	6,005.5	6,005.5	100.0	383.9	371.0	6,018.4

Column 1 (5.15, 1): HFCE domestic concept – HBS-based estimates

Subtotal '5.15, 1' = Subtotal '5.6, 12'

HBS-based estimates for HFCE according to the domestic concept for each COICOP group (estimates from Table 5.6) are presented in this column. The sum total of this column is 12,202.0 million euros, which is 79.8% of HFCE for 2021 based on the CF method.

Column 2 (5.15, 2): HFCE domestic concept – Retail trade based estimates

Subtotal '5.15, 2' = Subtotal '5.8, 8'

RT-based estimates for HFCE are presented in this column (estimates from Table 5.8). The total of this column is 8,569.4 million euros, which is 56.0% of HFCE for 2021 based on the CF method.

Column 3 (5.15, 3): HFCE domestic concept – Estimates based on other sources

Subtotal '5.15, 3' = Subtotal '5.10, 8'

In this column, estimates have been taken from Table 5.10 – HFCE estimates based on other sources for some COICOP groups. The total of this column is 7,334.2 million euros, which is 47.9% of HFCE for 2021 based on the CF method.

Column 4 (5.15, 4): HFCE domestic concept – Final (best) independent estimate before reconciliation

In Column 4, the best estimate is chosen for each COICOP group. In general, it is one of the results presented in columns 1–3. In Estonia, the best estimate is chosen at the 4-digit level of COICOP. The sum total of this column is 15,299.6 million euros for 2021.

Deciding the best estimate for each item is a relatively complicated procedure. In general, the best estimate for food, non-alcoholic beverages and different services (cleaning, repair and hire of clothing and footwear, domestic and household services, out-patient health services, services for recreation and culture, education) is derived from HBS-based calculations. For those commodity groups, the HBS is considered to be a better source, as it provides more detailed information compared to the data available from the SBS survey and therefore, fewer adjustments in basic data are needed for using them for HFCE estimates.

At the same time, RT is used as the best source for estimating purchases of different goods, for example, alcoholic beverages, tobacco, clothing and footwear, furnishings and household equipment, etc. Results based on other sources (Table 5.10) are considered to be the best estimate in the case of special estimates (e.g. rentals, purchases of passenger cars), or for basic statistics, except retail sales (e.g. SBS survey, energy statistics for fuel consumption, environment data for miscellaneous services related to housing).

Column 5 (5.15, 5): HFCE domestic concept – Commodity flow method based estimates

Subtotal '5.15, 5' = Subtotal '5.13, 10'

In this column, estimates have been taken from Table 5.13 – commodity flow based estimates for HFCE.

Column 6 (5.15, 6): HFCE domestic concept – NA estimates actually used as a percentage of best estimates before reconciliation

$$'5.15, 6' = '5.15, 5' / '5.15, 4' \times 100$$

This column illustrates how much the new estimates obtained differ from the current estimate. The discrepancy is 0%; thus, the best estimate before reconciliation is the same as the estimate actually used.

Column 7 (5.15, 7): Resident households' expenditure in the rest of the world

The HFCE domestic concept estimate does not include resident households' expenditures abroad (537.8 million euros in 2021). Therefore, data from the BOP are included in this column. A short description of the residents' expenditure in the rest of the world is presented in Section 5.7.2.4 and in Table 5.6 above.

Column 8 (5.15, 8): Non-residents' expenditure on the economic territory

HFCE using the national concept means that the expenditures of non-residents on the economic territory (532.4 million euros) are not included. In order to make the transition to the domestic concept, this item is to be added to the HFCE national concept estimate. The data on non-residents' expenditures in Estonia are obtained from the BOP. A short description of these expenditures on the economic territory is presented in Section 5.7.2.4 and in Table 5.6 above.

Column 9 (5.15, 9): HFCE national concept – NA estimates actually used before reconciliation

$$\text{Total } '5.15, 9' = '5.15, 5' + '5.15, 7' - '5.15, 8'$$

This column includes the NA estimate actually used for the HFCE according to the national concept: 15,305.1 million euros.

5.7.3. Detailed calculations by COICOP items

The following part of the chapter describes the sources and estimation methods used and the adjustments made by COICOP groups in the final HFCE before reconciliation.

01. Food and non-alcoholic beverages

The HBS data are the best source used for food and non-alcoholic beverages. The level of describing the purchases of food and non-alcoholic beverages is considered to be better in the HBS than in RT. Expenditures on food and non-alcoholic beverages constitute 19.2% of the HFCE (2,945.1 million euros in 2021).

02. Alcoholic beverages, tobacco, narcotics

The expenditure of this group is 1,104.7 million euros (this is 7.2% of the HFCE). RT is the main source for data on alcoholic beverages and tobacco, because it is known that purchases of these commodities are underestimated in the HBS. The best estimate for the consumption of narcotics is the special estimate of NA experts from the production side. The calculation of the special estimate for the consumption of narcotics is described in Chapter 7.

03. Clothing and footwear

This group makes up about 5.9% of the HFCE (907.5 million euros). RT is the main source of data for these goods, because it is known that RT reflects the amount of expenditures on clothing and footwear better than the HBS. For services, the HBS is the main source as the SBS survey includes also services not related to this group.

04. Housing, water, electricity, gas and other fuels

The expenditure of this group is 3,325.0 million euros (this is 21.7% of the HFCE).

For actual and imputed rent, the NA experts' special estimation is the main source, as these items are not covered by the data sources. Dwellings are divided into rented and owner-occupied dwellings. Actual rentals amount to 2.0% of HFCE (305.1 million euros) in 2021. Two types of actual rentals are estimated: public and private rents. Current housing statistics include data about public and private dwelling stock.

For imputed rent, the special adjustment amounts to 2,037.2 million euros, which is 13.3% of the HFCE. The valuation of owner-occupied dwellings is described in Section 3.18.2.1.

The NA experts' estimation is the main source for data on the maintenance and repair of dwellings, because a special methodology is required. The sum of this group is quite small: 34.5 million euros (this is 0.2% of the HFCE).

Environment statistics are the main source for data on water supply and miscellaneous services relating to the dwelling (data from the HBS and SBS survey are also available). The share of this group is 1.1% of HFCE (161.6 million euros in Estonia).

The amount of expenditure on electricity, gas and other fuels is 786.6 million euros, which is about 5.1% of the HFCE. Energy statistics are the main source for information on this item (data from the HBS and SBS survey are also available). Large enterprises are quite monopolistic in selling electricity and gas, and therefore, energy statistics are considered to be a better source of data. For solid fuels, RT statistics are deemed the best source.

05. Furnishings, household equipment and routine maintenance of the house

It is known that RT data reflect the level of expenditures on furnishings and household equipment better than data from the HBS. Therefore, RT data are used as the main source for goods. For services, the HBS is the main data source, because the HBS indicates the consumption of these services better than SBS. For glassware, tableware and household utensils and for major tools and equipment, a combined estimate is chosen: RT for goods and SBS data for the repair of glassware, tableware and household utensils (for these groups, data from the HBS are also available). The sum total of furnishings is 769.2 million euros (5.0% of the HFCE in Estonia).

06. Health

RT data are the main data source for medical goods (data from HBS are also available), while the HBS is the main source for data on out-patient services, and SBS and PSFS are the main data sources for hospital services. For out-patient services, data from SBS and PSFS are also available. See also Section 3.23. The amount of this group is 3.6% of the HFCE (555.9 million euros).

07. Transport

The expenditure of this group is 1,581.6 million euros (this is 10.3% of the HFCE).

07.1. Purchase of vehicles

The share of this group is 2.0% of the HFCE (311.6 million euros). RT is the main source of data for this group, because these kinds of purchases are underestimated in the HBS. However, for the purchases of motor cars other sources are used. For COICOP group 07.1.1, a special estimate is calculated, because these purchases are underestimated in the HBS and in RT data. HBS data often cover only the monthly payments of car leasing (not the actual value of the car purchase) and RT data cover only vehicles sold in the RT system. The breakdown of the calculation is shown in Table 5.16.

Generally, the special estimate of motor cars has three different components:

- 1) New private vehicles registered for the first time during the year based on information in the official registration documents of the Estonian Road Administration (ERA). This data source covers new cars purchased by private persons without financial or operating leasing and new cars leased on a financial lease. Information about average prices is derived from price statistics. The average prices are calculated taking discounts into account. In addition, the car models used for pricing have been kept comparable over the year.
- 2) Leased cars (operating lease – the lessor is the owner of the car; thus, it is necessary to estimate this number). The information is derived from Eesti Pank (lease portfolio of new sales of passenger cars to households). From this estimate, GFCF and the part already covered by the ERA estimate are deducted (this part is independently estimated). Information about average prices is derived from price statistics. The average prices are calculated taking discounts into account. In addition, the car models used for pricing have been kept comparable over the year.
- 3) Vehicles purchased second-hand and not leased (based on the information from the previous two estimates and on HBS data). Information about average prices is derived from price statistics. The average prices are calculated taking discounts into account. In addition, the car models used for pricing have been kept comparable over the year.

The list prices are not used in the estimation of HFCE on vehicles.

Assuming that HBS data show the correct structure for the purchases of new and second-hand cars, on the basis of HBS raw data, we can see that the number of new cars makes up about $10,799 / 91,355 = 11.82\%$ of the total number of purchased cars. Thus, we assume that 11.82% is the share of new cars (out of the total number of cars purchased in 2021) purchased by households in 2021 in Estonia. Thus, the structure can be expressed as follows:

$$\frac{N(\text{HBS})}{N(\text{HBS}) + \text{SH}(\text{HBS})} = \frac{N(\text{ERA}) + N(\text{leased})}{N(\text{ERA}) + \text{SH}(\text{ERA}) + N(\text{leased}) + \text{SH}(\text{leased}) + \text{SH}(\text{unknown})}$$

where:

N – the number of new cars,

SH – the number of second-hand cars,

ERA – the Estonian Road Administration.

Table 5.16 Calculation of purchases of motor cars, 2021
(million euros)

Calculation	Component	New cars	Second-hand cars	Total
1=2+5	Vehicles registered for the first time during the year based on information of the ERA	22,626	26,631	49,257
2	- including private	2,220	14,589	16,809
3	Average price, euros	23,852	3,873	
4=2*3/1000000	Total of private, million euros	53.0	56.5	109.5
5	- including business	20,406	12,042	32,448
6=5*3/1000000	Total of business, million euros	486.7	46.6	533.4
7	- including leased cars			788.7
8	of which cars leased to private persons			429.8
9	- including financial leasing			191.4
10=8-4/3*9	Total of private leased, million euros	70.4	104.2	174.6
11=10/3*1000000	Number of private cars (based on the leasing statistics)	2,950	26,911	29,861
12	Total, million euros, based on HBS raw data	257.6	353.8	611.4
13=12/3*1000000	Number of private cars (based on the HBS)	10,799	91,355	102,154
14=13*((new from 2)+(new from 11))/(new from 13)-(2+11)	Number of private cars already registered and not leased			2,231
15=14*3/1000000	Total of private already registered, million euros			8.6
16=4+10+15	Total purchasing of motor cars, million euros			292.7

In Estonia, no car scrap schemes exist; therefore, no additional estimates are made.

Different principles are applied for the exports and imports of cars by private individuals in intra-EU and extra-EU trade. In intra-EU trade, exports and imports of cars by private individuals are not included in international trade in goods statistics, because data are collected only from enterprises. In extra-EU trade, such transactions by private individuals are recorded in customs declarations and included in ITGS.

07.2 Operation of personal transport equipment

There are several main sources used for data on the operation of personal transport equipment (the total amount of this group is 1,021.5 million euros, which is about 6.7% of the HFCE). For goods, RT is considered to be the best source. Data from the HBS are also available. For COICOP group 07.2.3 “Maintenance and repair of personal transport equipment”, SBS services data are the best source. For this group, data from the HBS are also available. For COICOP group 07.2.4 “Other services in respect of personal transport equipment”, the HBS is the best source. For these services, data from the SBS survey are also available.

07.3 Transport services

The total amount of transport services makes up 1.6% of the HFCE (248.5 million euros). The SBS survey is the main source for transport services, because these data are considered to be

more precise in comparison to HBS data. For COICOP group 07.3.5, data from PSFS are also used.

According to COICOP, when a ticket covers two or more modes of transport – for example, intra-urban bus and inter-urban train and ferry – and the expenditure cannot be apportioned between them, such purchases should be classified in COICOP group 07.3.5 “Combined passenger transport”. In the Estonian capital Tallinn, there are the following means of city transportation (covered by a common ticket system): trams (07.3.1), trolley buses (07.3.2) and intra-urban buses (07.3.2). Therefore, Tallinn’s city transport is classified as COICOP group 07.3.5 “Combined passenger transport”.

08. Communication

Communication expenditures make up 3.0% (454.1 million euros) of the HFCE. For these expenditures, SBS data are the main source. Communication services are provided by large enterprises that are quite monopolistic, and therefore, the SBS survey is considered to be a better source. Also, data from the HBS are available for these groups.

09. Recreation and culture

The expenditures on recreation and culture account for 9.0% (1,377.5 million euros in 2021 in Estonia) of the total HFCE. RT is the main source for goods (for these goods, data from the HBS are also available). For services, the HBS is the main source (data from the SBS survey are also available), except for package holidays. For cultural services, data from other sources (SBS, PSFS; a further description is provided in Section 3.24) are also available.

Games of chance form an exceptional group. The share of games of chance was 12.8% of the expenditures on recreation and culture (176.1 million euros). The expenditures on games of chance are calculated as a “net” valuation (i.e. in HFCE, the included expenditure of games of chance is the difference between the amounts paid for lottery tickets or placed in bets and the amounts paid out to winners). The NA experts’ special estimate based on SBS raw data and Business Register data is considered the best estimate. In the HBS, these expenditure data are not correctly recorded (the HBS does not include income data, and therefore, it does not correspond to the net concept).

Information about package tours is available from the HBS and the SBS survey. Data from the SBS are used as the main source. The expenditures of this group amount to 59.2 million euros.

10. Education

In 2021, the expenditures of this group amounted to 54.8 million euros, i.e. to 0.4% of the HFCE. The HBS is usually the main data source for education. Data from the SBS survey and other sources (PSFS; see also Section 3.22) are also available.

11. Restaurants and hotels

Expenditures in this group accounted for 5.3% (813.8 million euros) of the total HFCE in 2021. Output estimated by using the data from SBS is the main source of data in this group. The output information is obtained from the production side estimates. Data from the HBS are also available but considered to be underestimated.

12. Miscellaneous goods and services

This group (1,416.0 million euros, 9.3% of the HFCE) consists of different goods and services. Therefore, the main sources are very different.

- For personal care, the main sources include RT for goods and the HBS for services. For these goods, data from the HBS, and for these services, data from the SBS survey are also available. A special estimate by NA experts is used for prostitution services. See the detailed description provided in Chapter 7.
- For jewellery, clocks and watches, a combined estimate is chosen: goods data are obtained from RT and data about the repair of such articles from the SBS survey. For goods and services, data from the HBS are also available.
- For other personal effects, RT is the main source. Again, data from the HBS are also available.
- The HBS is the main source for data on social protection, because the HBS reflects some types of services better than the SBS survey. Data from other sources (SBS, PSFS; see also Section 3.23) are also available.
- The HFCE estimates for insurance services are obtained from the calculations of the production side. The total value of this group is 80.1 million euros, which is 0.5% of the total HFCE. The allocation of the output of insurance enterprises between different sub-sectors is described in Section 3.17. Data from the HBS are also available, but they include only information about charges and not revenues, and this is not in compliance with the service charge concept. The distribution of insurance production between sectors is calculated based mainly on the information about insurance premiums paid by type of insurance.
- FISIM is the special estimate of an NA expert. See the description provided in Chapter 3. The total value of FISIM is 256.7 million euros, which is about 1.7% of the HFCE.
- For other financial services, the special estimate of an NA expert is the main source as the HBS underestimates the value of these expenditures (97.7% smaller compared with the NA expert's estimate). The group 'Other financial services' consists of: actual charges for the financial services of banks, post offices, money changers and similar institutions, and administrative charges of private pension and investment funds and the like. Information about the actual charges for the financial services of post offices is obtained from the SBS. Information about the exchange of currency and the administrative charges of private pension and investment funds is derived from financial statistics. The output for pension funds is equal to operating costs, which is included in the HFCE. Data about monetary intermediation services are derived from Eesti Pank and from financial statistics.
- For other services, SBS data and also data from the PSFS (information about state fees on legal documents) are the main sources used. However, stamp taxes for driving licenses are covered in COICOP group 07.2.4. Data from the HBS are also available, but data in this source are underestimated.

5.8. NPISH final consumption expenditure

The final consumption expenditure of the NPISH sector is derived as output (the sum of intermediate consumption, compensation of employees, consumption of fixed capital and other taxes on production) minus market sales, production of research and development for own final use, own account software and income in kind (fringe benefits) plus humanitarian goods. The sources for final consumption estimations of NPISH are the same as for the production approach.

Table 5.17 provides final consumption expenditure by different types of NPISH and indicates the main sources and the estimation method used.

Table 5.17 Final consumption expenditure of NPISH sector, 2021
(million euros)

Type of NPISH	Final estimate	Sources and estimation methods
Housing	57.0	Administrative data from the Tax and Customs Board, CFC (PIM)
Recreation and culture	163.8	Statistical survey of non-profit institutions, administrative data from the Tax and Customs Board, and annual reports of non-profit institutions and foundations from the Business Register, CFC (PIM), R&D for own final use, own account software
Education	76.8	Statistical survey of non-profit institutions, administrative data from the Tax and Customs Board, and annual reports of non-profit institutions and foundations from the Business Register, CFC (PIM), R&D for own final use, own account software
Social protection	43.5	Statistical survey of non-profit institutions, administrative data from the Tax and Customs Board, and annual reports of non-profit institutions and foundations from the Business Register, CFC (PIM)
Other services	197.3	Statistical survey of non-profit institutions, administrative data from the Tax and Customs Board and annual reports of non-profit institutions and foundations from the Business Register, CFC (PIM), R&D for own final use, own account software
Total NPISH	538.3	

Table 5.18 follows from the Process Tables and shows the values derived from different types of sources, and the values of conceptual, exhaustiveness (N1–N7) and balancing adjustments.

Table 5.18 Final consumption expenditure of NPISH sector by sources and adjustments, 2021
(million euros)

	NPISH final consumption expenditure
Sources	540.5
..Surveys and censuses	344.1
..Administrative records	255.7
..Combined data	-85.6
..Extrapolations and models	26.2
..Other	
Adjustments	-2.2
..Data validation	
..Conceptual	1.0
..Exhaustiveness	-3.2
..Balancing	
Final estimate	538.3

Data source

For the production of economic statistics, the Business Register for Statistical Purposes is used. It includes all economic units active in Estonia, which are necessary for compiling national accounts estimates. The statistical units entered into the Business Register for Statistical

Purposes include legal units, such as institutional units (enterprises, non-profit institutions, foundations, state and local government institutions) and local kind-of-activity units.

For all units included in the statistical business register, the common data consist of an identification code and contact information. All statistical units are classified by economic activity, legal form, form of ownership and geographical location. An institutional sector code is attributed to each unit in the Business Register for Statistical Purposes.

Statistics Estonia has developed and introduced rules for the automatic encoding of units by institutional sector. The rules are based on legal forms, ownership types and activity codes. Some manual checks are still necessary. For non-profit institutions, the criteria given in §§ 3.30–3.36 of ESA 2010 are applied.

If a unit is owned, controlled or financed by the central or a local government, it is classified either in the government sector (if it is a non-market producer) or in the non-financial or financial corporations sectors (in the case of a market producer). Private non-profit institutions serving businesses are classified in the non-financial corporations sector or the financial corporations sector. The majority of non-profit organisations are classified into the NPISH sector.

Over the course of a year, the Business Register for Statistical Purposes is updated on the basis of legal registers, statistical surveys, different administrative data sources and other sources. For non-profit institutions, the Register of Non-profit Institutions and Foundations kept by the Ministry of Justice is the main data source.

Estimation

The sources for final consumption estimations for the NPISH sector are the same as for the production approach. Starting from 2021, the yearly collection of questionnaires from non-profit institutions was terminated and the special survey is conducted after every four or five years. At the same time, the modelling of indicators based on annual reports of NPIs received from the Business Register was introduced. As some indicators which were previously asked in the statistical questionnaire for non-profit institutions are missing in annual reports, the structures of income and expenditures calculated according to the questionnaire data are used for modelling. The data for output calculations are received from the expenditure side of the questionnaire of non-profit organisations.

In 2021, the final consumption expenditure of the NPISH sector was estimated at 358.0 million euros (see Table 5.19).

Table 5.19 Final consumption expenditure of NPISH sector, 2021
(million euros)

Activity code	Activity	Output	Sales	Income in kind	Own account software	R&D for own final use	Social transfers in kind	NPISH final consumption
A	B	1	2	3	4	5	6	7=1-2-3-4-5+6
S.L.6832	Housing	58.4	1.4	0.0	0.0	0		57.0
S.P.85	Education	87.7	10.1	0.1	0.2	0.52		76.8
S.Q.87_88	Social protection	56.4	12.9	0.1				43.5
S.R.90_91, S.R.93	Recreation and culture	193.2	29.1	0.1	0.1	0.14		163.8
S.S.94	Other services	231.8	32.6	0.2	1.1	0.8	0.0	197.3
	Total NPISH	627.5	86.0	0.4		1.4	0.0	538.3

For calculating final consumption expenditure, the market output, production of research and development for own final use, own account software and income in kind are deducted from total output value. It means that output is reduced by income from rent and from the sales of market products and services and by the production of research and development for own final use, own account software and income in kind.

The data about market output, i.e. income from rent and income from sales of products and services, are modelled on the basis of the income side of the questionnaire. The sales of goods consist mainly of the sale of booklets, books, forms, postcards, pharmaceutical goods, napkins, orthopaedic appliances and sports goods. The provision of market services includes the provision of business and management consultancy services, education, social and sporting services.

Problems occur with distinguishing whether the products and services are sold at an economically significant price, i.e. whether it is market production and should be deducted from output to receive final consumption or whether it is other non-market output provided at prices that are not economically significant.

Data about social transfers in kind are received from foreign trade statistics. It is the declared value of goods received as foreign aid. 88% of the data on the value of humanitarian goods were collected from customs declarations and 12% was survey data (Intrastat. Arrivals).

The consumption of fixed capital (CFC) is estimated using the simplified PIM method. As the data are derived on the basis of the annual reports and surveys of non-profit institutions, the complete coverage of CFC is ensured. For a detailed description, see Section 4.12.

5.9. Government final consumption expenditure

Data source

A description of the estimation of total government output is provided in Chapter 3.

The estimation of general government transactions is based on the detailed data from the Public Sector Financial Statements (PSFS) where general government units are totally covered. According to ESA 2010 rules, the delimitation of government sector units is made on the basis of the market/non-market test. The testing is based on the accounting information available in the PSFS.

There are certain units which are classified to the government sector based solely on the nature of their activities without the market/non-market test. The main examples are public sector hospitals and social care facilities. Previous analyses carried out for those units have proven that they are created directly to carry out public policies and therefore are considered to be government sector units, even in some rare cases where receipts from the private sector are slightly higher than receipts from the government sector. General government final consumption expenditure is presented in Table 5.20.

Table 5.20 General government final consumption expenditure, 2021
(million euros)

Sector	Final estimate	Sources and estimation methods
Central government (S.1311)	3,329.7	Public Sector Financial Statements (PSFS) and CFC (PIM)
Local government (S.1313)	2,292.3	Public Sector Financial Statements (PSFS) and CFC (PIM)
Social security funds (S.1314)	644.0	Public Sector Financial Statements (PSFS) and CFC (PIM)
Total general government	6,265.9	

Table 5.21 follows from the Process Tables and shows the values derived from different types of sources, and the values of conceptual, exhaustiveness and balancing adjustments.

Table 5.21 General government final consumption expenditure by sources and adjustments, 2021
(million euros)

	General government final consumption expenditure
Sources	6,522.5
..Surveys and censuses	
..Administrative records	5,544.3
..Combined data	
..Extrapolations and models	978.5
..Other	
Adjustments	-256.6
..Data validation	
..Conceptual	-13.5
..Exhaustiveness	-243.1
..Balancing	
Final estimate	6,265.9

The PSFS system is the main data source for all general government units. For a further description, see Chapter 10.

Estimation

The methodology for estimating output in the general government sector is described in detail in Section 3.21. All general government units are covered in the PSFS system. The identification and exclusion of capital expenditures are described in Chapter 3.

The following is a description of the identification and estimation of receipts from the sales of products and from own-account capital formation (P11, P131, P12 – see § 3.98(a) of ESA 2010). § 3.98(a) of ESA 2010 stipulates the following: final consumption expenditure (P.3) by government includes the value of the goods and services produced by general government itself (P.1) other than own-account capital formation (corresponding to P.12), market output (P.11) and payments for non-market output (P.131).

For own-account software, data from PSFS are used. For more detailed information, see Section 3.16.

For own-account R&D, data from the Research and Development Survey are used as the main source. These data are supplemented with and checked against the data from the Public Sector Financial Statements.

The estimation of government sales income (P.11+P.131) is based on the PSFS data. In the central government sector (S.1311), the main categories of sales are state fees (product 1.O.842). Rental income (product 1.L.682) is the main category of sales in the local government sector (S.1313). Most categories of state fees are recorded as government income from the sale of services, except car registration taxes (taxes on products) and state fees for issue of government activity licenses and activity permits (other taxes on production). The estimation of social transfers in kind is based on the detailed PSFS data.

The social transfers in kind of market goods and services cover general government expenditure on products supplied to households via market producers. They are mainly financed from the state budget, local budgets and the budget of the Health Insurance Fund. In the central government sector (S.1311), the main categories of social transfers include expenditure on health services; in the local government sector (S.1313), the main categories of social transfers are expenditure on education services, and in the sector of social security funds (S.1314), expenditure on health services and medicines. Table 5.22 shows social transfers in kind classified by product and sub-sector.

Table 5.22 Social transfers in kind, 2021
(million euros)

Product code	Product group	S.1311	S.1313	S.1314	Total
1.C.10	Food products	1.7	1.1		2.8
1.C.132	Made-up textile articles, carpets and rugs, cordage, rope, netting and other textiles			0.5	0.5
1.C.173	Household and toilet paper, sanitary goods and toilet requisites, dishes and the like, of paper or paperboard; paper stationery			0.1	0.1
1.C.2052	Diagnostic reagents, glues, gelatines, inks, photographic chemical materials, biofuel, lubricating preparations and other chemical products			4.8	4.8

1.C.21	Basic pharmaceutical products and pharmaceutical preparations			189.1	189.1
1.C.3092	Bicycles, invalid carriages, baby carriages, golf carts, hand carts; parts thereof	8.0	0	0	8.0
1.C.325	Syringes, sterilisers; artificial parts of the body; ophthalmic instruments; instruments and appliances used in dental treatment; orthopaedic appliances; medical furniture; other medical and dental instruments and supplies	12.1	0	5.6	17.7
1.D.353	Steam and hot water		4.2		4.2
1.H.4931	Passenger transportation by bus, tram and trolleybus		0.3		0.3
1.P.851	Education services	15.6	16.6		32.2
1.P.855	Sports and recreation education services; dancing, music and fine arts schools services; language schools and IT schools services; educational support services			35.2	35.2
1.Q.86	Human health services	92.5	0.3	349.5	442.2
1.Q.87_88	Residential care services; social work services without accommodation	9.4	13.8	1.5	24.6
	Total	139.3	36.2	586.4	762.0

The consumption of fixed capital is estimated using the simplified PIM model. As data for the government sector are derived from PSFS, the complete coverage of CFC is ensured. For a detailed description, see Section 4.12.

5.10. Acquisitions less disposals of produced fixed assets

5.10.1. Overview

Gross fixed capital formation (GFCF) is one of the most important components in domestic demand. The contribution of gross fixed capital formation to the GDP was 30.3% in 2021.

For all institutional sectors, gross fixed capital formation includes the acquisitions of new and existing tangible assets during the accounting year, including major repairs and land improvement, less disposals of tangible assets. Fixed assets acquired under financial leasing contracts (in the total value of capital goods) as well as own-account construction and major repairs of fixed assets are included in GFCF. Acquisitions less disposals of intangible assets, including own-account produced software and research and development, are also taken into account.

Tangible fixed assets consist of dwellings, other buildings and structures, machinery and equipment, weapons systems, and cultivated assets, which are used in the production process for more than one year.

Intangible fixed assets consist of research and development, mineral exploration and evaluation, computer software, and entertainment, literary or artistic originals. Research and development is the value of expenditure on creative work undertaken on a systematic basis in order to increase the stock of knowledge, including the knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications.

An essential shortcoming in the source data of GFCF estimates is the difference between the thresholds of fixed assets allowed by the Estonian accounting legislation and required by ESA 2010. According to the concepts of ESA 2010, expenditure on durables which are used in production in less than one year should be recorded as intermediate consumption. For example, expenditures on inexpensive tools used for common operations, such as saws, spades, knives, axes, hammers, screwdrivers, spanners, wrenches and other hand tools, and small devices such as pocket calculators are recorded as intermediate consumption.

In the case of durable goods, the Estonian accounting legislation considers commodities with an economic life of at least one year as fixed assets. In the legislation, no threshold is specified for the minimum value of those commodities. There is no information available about the threshold that enterprises and sole proprietors apply when distinguishing between IC and GFCF because the threshold for minimum value is not fixed.

The situation is different in the government sector where the Ministry of Finance has set the threshold for fixed assets at 5,000 euros since the beginning of 2016. The reconciliation of the estimates of small tools with the national accounts concept needs additional investigation and a methodology has to be developed for making the relevant adjustments.

Gross fixed capital formation is estimated:

- 1) By institutional sector (non-financial corporations, financial corporations, general government, households and non-profit institutions serving households);
- 2) By type of fixed assets (18);
- 3) By activity (72);
- 4) By product (49 in the supply and use tables). A distinction is made between domestically produced and imported products.

Table 5.23 shows acquisitions less disposals of fixed assets by NACE Section (A*21) and type of assets.

Table 5.23 GFCF by NACE Section and type of assets, 2021
(million euros)

NACE Section	Total fixed assets	Dwellings (AN.111)	Other buildings and structures (AN.112)	Machinery and equipment (AN.113) + Weapons systems (AN.114)	Cultivated biological resources (AN.115)	Intellectual property products (AN.117)
Agriculture, forestry and fishing (A)	297.5	0.2	91.7	197.5	4.2	3.8
Mining and quarrying (B)	34.8	0.0	4.6	25.5	0.0	4.7
Manufacturing (C)	772.1	0.5	199.3	453.6	0.0	118.7
Electricity, gas, steam and air conditioning supply (D)	444.4	0.4	134.1	269.5	0.0	40.6
Water supply; sewerage, waste management and remediation activities (E)	141.5	0.3	96.0	39.9	0.0	5.4

NACE Section	Total fixed assets	Dwellings (AN.111)	Other buildings and structures (AN.112)	Machinery and equipment (AN.113) + Weapons systems (AN.114)	Cultivated biological resources (AN.115)	Intellectual property products (AN.117)
Construction (F)	258.6	0.2	85.6	162.4	0.0	10.4
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	472.1	0.4	138.6	283.0	0.0	50.2
Transportation and storage (H)	663.8	-0.5	163.5	455.2	0.0	45.6
Accommodation and food service activities (I)	86.5	0.1	53.2	31.2	0.0	2.0
Information and communication (J)	546.1	0.2	90.0	132.6	0.0	323.3
Financial and insurance activities (K)	91.5	0.0	15.3	5.0	0.0	71.2
Real estate activities (L)	2,528.0	1,516.4	927.5	81.3	0.0	2.8
Professional, scientific and technical activities (M)	1,272.0	0.2	103.0	79.6	0.0	1,089.2
Administrative and support service activities (N)	225.8	0.1	26.0	170.2	0.0	29.5
Public administration and defence; compulsory social security (O)	905.8	-0.3	574.7	206.4	0.0	125.1
Education (P)	279.8	-0.0	200.0	33.0	0.0	46.8
Human health and social work activities (Q)	217.9	0.2	133.3	66.8	0.0	17.6
Arts, entertainment and recreation (R)	150.8	0.0	109.6	22.8	-0.0	18.3
Other service activities (S)	41.1	0.0	27.3	9.2	0.0	4.5
Activities of households as employers of domestic personnel (T)	0.0	0.0	0.0	0.0	0.0	0.0
Total	9,430.4	1,518.5	3,173.3	2,724.7	4.2	2,009.7

Gross fixed capital formation was estimated at 9,430 million euros in 2021 (see Table 5.24). The non-financial corporations sector was the largest contributor (62.4%) to the total investments of the economy. The general government represented 19.3% of total GFCF, households generated 17.1% of GFCF, and the GFCF of financial corporations amounted to 1.0%. The share of NPISH was 0.3% of total GFCF.

In Estonia, estimates of additions to the value of non-produced non-financial assets are made for major improvements to land and for costs of ownership transfer on land. For these estimates, see Table 5.25.

Table 5.24 shows acquisitions less disposals of fixed assets by institutional sector (S.11–S.15) and type of assets.

Table 5.24 Acquisitions less disposals of fixed assets by institutional sector and type of asset, 2021
(million euros)

Type of asset	Total	S.11	S.12	S.13	S.14	S.15
Dwellings (AN.111)	1,518.5	5.8	0.0	-1.0	1,513.7	0.0
Other buildings and structures (AN.112)	3,173.3	2,046.7	15.3	1,084.2	12.6	14.6
..Buildings other than dwellings (AN.1121)	2,770.0	1,711.0	15.2	1,026.1	3.5	14.2
..Roads and bridges (AN.11221)	41.6	4.9	0.0	36.7	0.0	0.0
..Other infrastructure and structures (AN.11222)	340.2	319.3	0.0	20.9	0.0	0.0
..Land improvements (AN.1123)	0.4	0.0	0.0	0.0	0.0	0.4
..Costs of ownership transfer (AN.11231)	19.9	10.3	0.1	0.5	9.1	0.0
..Land improvements (AN.11232)	1.2	1.2	0.0	0.0	0.0	0.0
Machinery and equipment (AN.113+AN.114)	2,724.7	2,273.3	5.0	358.0	82.3	6.0
..Transport equipment (AN.1131)	979.7	826.4	3.1	86.3	62.0	1.8
..Computers (AN.11321)	103.1	52.8	0.7	49.0	0.0	0.5
..ICT equipment (AN.11322)	122.6	94.3	0.4	27.1	0.7	0.0
..Other machinery and equipment (AN.1139+AN.114)	1,519.4	1,299.7	0.8	195.6	19.6	3.7
Cultivated biological resources (AN.115)	4.2	1.9	0.0	-0.0	2.3	0.0
..Animal resources yielding repeat products	4.0	1.7	0.0	-0.0	2.3	0.0
..Tree, crop and plant resources yielding repeat products	0.2	0.2	0.0	0.0	0.0	0.0
Intellectual property products (AN.117)	2,009.7	1,555.1	71.2	377.6	0.0	5.8
..Research and development (AN.1171)	370.6	176.3	3.1	186.8	0.0	4.3
..Mineral exploration and evaluation (AN.1172)	6.1	4.9	0.0	1.2	0.0	0.0
..Computer software and databases (AN.1173)	1,598.4	1,351.1	68.1	177.8	0.0	1.5
..Entertainment, literary or artistic originals (AN.1174)	34.6	22.7	0.0	11.8	0.0	0.0
..Other intellectual property products (AN.1179)						
Total fixed assets	9,430.4	5,882.8	91.5	1,818.8	1,610.9	26.4

A distinction is made between resident and non-resident units acquiring produced and non-produced non-financial assets in the domestic economy using compiled use tables for imports. Residents include:

- 1) state authorities or agencies of the Republic of Estonia in the broadest sense (legislative, executive and judicial bodies or their agencies, and constitutional institutions), and local governments or their agencies;
- 2) Estonian diplomatic, consular or other official representations in foreign countries, and representative offices of other Estonian institutions or organisations abroad which are not engaged in any economic or commercial activity;

- 3) legal persons in public law and their agencies formed under the laws of the Republic of Estonia;
- 4) legal persons in private law registered in the Republic of Estonia, or their representative offices (including cross-border service providers);
- 5) companies (Societas Europaea) or cooperatives (Societas Cooperativa Europaea) registered in the Republic of Estonia under the statute for a European company, or their representative offices;
- 6) branches of foreign legal persons registered in the Republic of Estonia;
- 7) Estonian citizens residing in the Republic of Estonia;
- 8) aliens residing in the Republic of Estonia who hold a permanent residence permit or a temporary residence permit for at least one year;
- 9) persons specified in clauses 7 or 8, studying or undergoing medical treatment abroad, irrespective of the duration of their studies or medical treatment;
- 10) persons specified in clauses 7 or 8 who are members of a ship crew, or seasonal or cross-border workers abroad, irrespective of the duration of their stay abroad;
- 11) diplomats, military personnel, staff of consular or other official representations of the Republic of Estonia and their family members abroad who enjoy immunity and diplomatic privileges.

All persons/units who are not covered by the definition of residents are considered non-residents.

Table 5.25 is an excerpt from the Process Tables and shows the values derived from different types of sources, and the values of conceptual, exhaustiveness (N1–N7) and balancing adjustments.

Table 5.25 GFCF by sources and adjustments, 2021
(million euros)

	Total fixed assets	Dwellings (AN.111)	Other buildings and structures (AN.112)	Machinery and equipment (AN.113) + Weapons systems (AN.114)	Cultivated biological resources (AN.115)	Intellectual property products (AN.117)
Sources	7,701.1	1,512.3	3,066.0	1,695.9	4.2	1,422.7
..Surveys and censuses	1.4					1.4
..Administrative records	2,877.8	1,302.0	1,105.9	365.0		104.9
..Combined data	4,530.3	5.3	1,956.6	1,250.1	1.9	1,316.3
..Extrapolations and models	291.5	204.9	3.5	80.8	2.3	
..Other						
Adjustments	1,729.4	6.3	107.3	1,028.8		587.0
..Data validation	4.9	0.6	3.9	0.4		
..Conceptual	1,225.4	5.2	5.9	1,090.1		124.3
..Exhaustiveness	453.3		20.1	3.0		430.2
..Balancing	45.8	0.5	77.5	-64.7		32.5
Final estimate	9,430.4	1,518.5	3,173.3	2,724.7	4.2	2,009.7

5.10.2. Main data sources for estimations and their conversion to national accounts results

Non-financial corporations sector

For non-financial corporations, GFCF is calculated on the basis of the SBS survey.

Part 1 of Module H “Changes in tangible assets” of the SBS survey provides the following information on changes in tangible fixed assets:

	Row code
Stock at depreciated cost at the beginning of the year	H_020
Changes during the year:	X1
Purchases and improvements	H_030
...purchases of land and buildings previously used	H_031
..purchases of new buildings, improvements, newly-erected buildings	H_032
..construction and improvements with own labour force	H_033
Capitalised borrowing costs	H_040
Additions through business associations	H_050
Depreciable cost	H_060
Discounts and mark-ups	H_070
Re-classifications, total	H_075
..re-classifications due to early payments	H_080
..other re-classifications	H_090
Sales	H_100
Other changes	H_110
Stock at historical cost at the end of the year	H_130
Sale of fixed assets at sales price	H_140

The asset types distinguished in Module H “Changes in tangible assets” are as follows:

Type of fixed assets
Total investments in tangible assets
- Land
- Buildings and structures
- Transport equipment total
Including vehicles of water, air, railway transport (excl. land transport)
- Computers and computer systems
- Other machinery and equipment
- Other tangible assets
Including valuables
- Projects in progress
Including construction in progress
- Prepayments for tangible assets

Part 2 of Module H, “Changes in tangible assets: biological assets, real estate investments”, provides the following information on changes in tangible fixed assets:

	Row code
Stock at depreciated cost at the beginning of the year	H_020
Changes during the year:	X1
Purchases and improvements	H_030
...purchase of land and buildings previously used	H_031
..purchase of new buildings, improvements, newly-erected buildings	H_032
..construction and improvements with own labour force	H_033
Additions through business associations	H_050
Depreciable cost	H_060
Profit/loss from the revaluation at honest price	H_065
Discounts and mark-ups	H_070
Re-classifications total	H_075
..re-classifications due to early payments	H_080
Sales	H_100
Decrease in value due to the receipt of agricultural output	H_105
Increase due to value in growth	H_106
Other changes	H_110
Stock at historical cost at the end of the year	H_130
Sale of fixed assets at sales price	H_140

For NACE Section A, the following information is provided in addition to the above:

Decrease in value due to the receipt of agricultural output	H_105
Increase due to value in growth	H_106

The asset types distinguished in Module “Changes in tangible assets” are as follows:

Type of fixed assets
Total biological assets
- Land
- Buildings

For NACE Section A, the following information is provided in addition to the previously mentioned types of fixed assets:

Type of fixed assets
- Livestock
- Plantations
- Forest
- Grassland
- Prepayments
- Real estate investments

Part 3 of Module H “Changes in tangible assets” provides the following information on changes in intangible fixed assets:

Type of fixed assets		Total intangible assets	Good- will	Deve- lopment costs	Soft- ware	Concession s, patents, trademarks , licenses	Other intangible assets	Incl. projects in progress and pre- payments
		31	32	33	34	35	37	38
Stock at depreciated cost at the beginning of the year	H_020							
Changes during the year:	X1							
Purchases and improvements	H_030							
Capitalised borrowing costs	H_040							
..re-classifications due to early payments	H_080							
Stock at historical cost at the end of the year	H_130							
Investments (calculable)	H_150							

Method of calculation

In the calculation of GFCF in non-financial corporations, all parts of Module H are used. Data on the acquisitions of fixed assets, including the value of financial leasing, and data on disposals (sale at sales price) are taken from Module H.

5.10.1.1. Financial corporations sector

The financial corporations sector is divided into 3 activities and 9 sub-sectors: central bank (S.121), deposit-taking corporations except the central bank (S.122), money market funds¹⁴ (MMF) (S.123), non-MMF investment funds (S.124), other financial intermediaries except insurance corporations and pension funds (S.125), financial auxiliaries (S.126), captive financial institutions and money lenders (S.127), insurance corporations (S.128) and pension funds (S.129).

The distribution of sub-sectors between types of activities is presented in the box below.

Activity code	Activity	Sub-sector	Institution
F.K.64	Financial service activities, except insurance and pension funding	S.121	Central bank
		S.122	Deposit-taking corporations except the central bank
		S.124	Non-MMF investment funds
		S.125	Other financial intermediaries except insurance corporations and pension funds
		S.127	Captive financial institutions and money lenders

¹⁴ Do not exist in Estonia.

Activity code	Activity	Sub-sector	Institution
F.K.65	Insurance, reinsurance and pension funding, except compulsory social security	S.128	Insurance corporations
		S.129	Pension funds
F.K.66	Activities auxiliary to financial services, except insurance and pension funding	S.126	Financial auxiliaries

Credit institutions, big leasing companies and pension funds are surveyed, and statistics on them are compiled and published quarterly by Eesti Pank. The rest of the financial intermediaries (sub-sectors S.124, S.125 and S.127), financial auxiliaries (sub-sector S.126), and insurance companies are covered by statistical surveys carried out by Statistics Estonia.

For Eesti Pank, data on acquisitions (including major repairs) and disposals by type of fixed assets are obtained from the PSFS system. Further information about the aggregation level of assets in PSFS is provided in Section 5.10.2.3.

For all types of assets, GFCF is calculated as acquisitions less disposals.

The main data sources used for the GFCF estimates of deposit-taking corporations except the central bank (mainly commercial banks) include the annual statements of enterprises from which data on acquisitions and disposals by type of asset are available. The information is derived from Eesti Pank.

Assets are recorded based on the following breakdown:

- Intangible assets
 - Establishment charges
 - Goodwill
 - Research and development costs
 - Prepayments for intangible fixed assets
 - Other
- Tangible assets
 - Land and buildings
 - Including land and buildings for their own need
 - Computers
 - Cars
 - Prepayments for tangible fixed assets
 - Other
 - Including assets abroad

For all types of assets, GFCF is calculated as acquisitions less disposals.

For insurance corporations, the basic data required for GFCF estimates are obtained from the questionnaire “Insurance statistics” (see Chapter 10). The questionnaire includes a table which shows capital stocks at the beginning and at the end of the year, and acquisitions and disposals during the year. The variables are cross-classified by type of fixed assets. GFCF is calculated as acquisitions less disposals of fixed assets.

The sub-division S.125 (Other financial intermediaries except insurance corporations and pension funds) includes only 6 leasing companies who have joined the Estonian Leasing Association and are not covered by the survey of financial intermediation and auxiliary services. The data used for GFCF calculations in this particular group are obtained from the annual statements of leasing companies and from leasing sector statistics collected and compiled by the Estonian Leasing Association. Detailed data about fixed assets (acquisitions and disposals by type of asset) are available in the annual statements of the companies.

Data on fixed assets for sub-sectors S.124, S.125, S.126 and S.127 are collected with the questionnaire “Financial intermediation and auxiliary services” (see Chapter 10). Data on the acquisitions and disposals of assets are asked based on the following breakdown:

- Tangible assets
 - Land
 - Buildings and structures
 - New buildings, reconstruction
 - Previously used buildings
 - Transport equipment
 - Computers and computer systems
 - Other machinery and equipment
 - Other tangible assets
 - Valuables
 - Projects in progress
 - Prepayments for tangible assets
- Total intangible assets
 - Software
 - Goodwill
 - Other intangible assets
 - Projects in progress and pre-payments
- Real estate investments
 - Land
 - Buildings and structures
 - New buildings, reconstruction
 - Previously used buildings
- Biological assets

The asset breakdown corresponds to the data of other sub-divisions. GFCF is calculated as acquisitions less disposals of fixed assets.

5.10.1.2. General government sector

The PSFS system is the main source for estimating GFCF in the government sector. From PSFS, information about the movements of fixed assets (acquisitions, disposals, major improvements, discards, privatisation) during the year is available.

In the database of Public Sector Financial Statements, information about the following fixed assets is available:

Account number	Account name	AN Code
154000	Real estate investments at acquisition cost	AN.11121
154010	Accumulated amortisation of real estate investments	AN.11121

Account number	Account name	AN Code
155000	Land	If code of cash flow = 23 (reclassification), AN code is decided according to CPA classification
155100	Buildings (excl. dwellings) at acquisition cost	AN.11121
155101	Dwellings at acquisition cost	AN.1111
155106	Roads at acquisition cost	AN.111221
155109	Other structures at acquisition cost	AN.111222
155110	Accumulated amortisation of buildings (excl. dwellings)	AN.11121
155111	Accumulated amortisation of dwellings	AN.1111
155116	Accumulated amortisation of roads	AN.111221
155119	Accumulated amortisation of other structures	AN.111222
155300	Military assets at acquisition cost	If code of cash flow = 23 (reclassification), AN code is decided according to CPA classification
155400	Machinery and equipment at acquisition cost	AN.111323
155405	Transport equipment at acquisition cost	AN.11131
155410	Accumulated amortisation of machinery and equipment	AN.111323
155500	ICT equipment at acquisition cost	AN.111321
155600	Other fixed assets at acquisition cost	AN.111323
155700	Non-depreciable tangible assets	If code of cash flow = 23 (reclassification), AN code is decided according to CPA classification
155900	Non-delivered assets acquired through the centralised procedure	AN.111323
155910	Unfinished constructions and staged acquisitions	AN.1222
156000	Software at acquisition cost	AN.1122
156200	Rights and licenses at acquisition cost	AN.1129
156600	Other intangible assets at acquisition cost	AN.1123
156900	Non-delivered assets acquired through the centralised procedure	AN.1122
156910	Unfinished constructions and staged acquisitions	AN.1122
157020	Livestock	AN.11141
323290	Income from other activity	AN.1122
381000	Income from the sale of investment property	AN.11121
381001	Costs related to the sale of investment property	AN.11121
381101	Land sales-related expenses	AN.211
381110	Revenue from sold buildings (excl. dwellings)	AN.11121
381111	Costs related to the sale of buildings (excl. dwellings)	AN.11121
381115	Revenue from sold dwellings	AN.1111
381116	Costs related to the sale of dwellings	AN.1111
381120	Revenue from sold roads	AN.111221
381125	Revenue from sold other structures	AN.111222
381140	Revenue from sold machinery and equipment	AN.111323
381145	Revenue from sold transport equipment	AN.11131
381146	Costs related to the sale of transport equipment	AN.11131
381150	Revenue from sold ICT equipment	AN.111321
381160	Revenue from sold other depreciable tangible assets	AN.111323
381180	Revenue from sold unfinished buildings	AN.1222
381320	Revenue from sold rights and licenses	AN.1129
381411	Costs related to the sale of forest	AN.213
381420	Revenue from sold livestock	AN.11141
450030	Mediating foreign endowment for operating costs	If code of cash flow = 23 (reclassification), AN code is

Account number	Account name	AN Code
		decided according to CPA classification
507000	Capitalisation of labour expenses (minus)	AN.1122
507020	Capitalisation of social benefit tax (minus)	AN.1122
507040	Capitalisation of unemployment insurance tax (minus)	AN.1122
551308	Rent	AN.11131
551400	Information technology hardware and accessories	AN.111321
551401	Communication technology, hardware and accessories	AN.111322
551410	ICT software	AN.1122
601070	State fees related to the acquisition of assets	AN.11121

5.10.1.3. GFCF of households sector

GFCF in the households sector includes expenditure made by households both as market producers and consumers. Own-account construction and major repair of dwellings by households is also taken into account. Estimates for the households sector are presented in the following sections:

- GFCF of dwellings (Section 5.10.3.1);
- Own-account construction and major repair of dwellings by households (Section 3.18);
- GFCF of sole proprietors.

The GFCF of sole proprietors covers the purchases and leasing contracts of fixed assets by households. Data on investments made by sole proprietors are available from the business income declarations provided by the Tax and Customs Board.

Calculations are made by economic activity at the level of 2-digit NACE codes. The breakdown by type of asset (buildings and structures, transport equipment, computers and other machinery and equipment) is estimated using the SBS data on investments for enterprises. It is assumed that sole proprietors have a similar structure of investments as small enterprises with one to nine employees.

Separate calculations of capital rent are made for sole proprietors. The data are obtained from the monthly reports of leasing enterprises collected by Eesti Pank.

Information on the lease portfolio (new sales) for private persons is collected by the following types of assets:

- IT and local equipment and systems (IT equipment, office equipment, local equipment and systems);
- Real estate (project finance, office buildings, industrial buildings, commercial buildings, hotels and sports facilities, dwellings, apartments, blocks of flats, land);
- Passenger cars and other small vehicles (special purpose cars, cars, other small vehicles);
- Commercial vehicles (vans, trucks, trailers, minibuses, passenger buses, regular line buses, other commercial vehicles);
- Ships, aircraft and railway rolling stock (ships, aircraft, railway rolling stock);
- Machinery and equipment (industrial equipment, goods handling equipment, agricultural equipment, excavators, forestry equipment, medical equipment, building equipment, other machinery and industrial equipment).

The information is collected by different customer groups.

In the households sector, no data sources on intangible fixed assets are available; therefore, no estimates for the intangibles of households are made. Computer software is usually bought together with hardware; so, most of the software purchased by households is probably taken into account in total GFCF estimates as tangible fixed assets (item “Computers”).

5.10.1.4. NPISH sector

GFCF in the NPISH sector is based on the institutions’ annual financial statements from the Business Register.

The annual financial statements provide detailed information about the fixed assets and movements during the year for most of the units owning a substantial amount of fixed assets. The financial statements include information on capital stocks at the beginning and at the end of the year, acquisitions, disposals, discards and major repairs by the following types of fixed assets:

- Buildings
- Transport equipment
- Computers and computer systems
- Other machinery and equipment
- Other fixed assets

For all types of fixed assets, GFCF is calculated as follows: acquisitions, including major repairs, less disposals. The information is available by NACE activities.

Any other adjustments, except the threshold, are not relevant since the basic data are collected on the same basis as required by ESA 2010. Acquisitions are valued at purchaser’s prices including installation charges and other costs of ownership transfer; disposals are valued at basic prices after deducting the costs of ownership transfer. The threshold of fixed assets in several non-profit institutions is probably lower than stated in ESA 2010 and some small tools are also taken into account in GFCF instead of intermediate consumption. But an additional survey of NPISH is not required since this shortcoming has an insignificant impact on the total economy.

5.10.3. Detailed estimation methods used by AN code

In the next section, detailed estimation methods used by AN code are described.

5.10.1.5. Dwellings (AN.111)

Dwellings are estimated in the non-financial corporations sector (S.11), the general government sector (S.13) and the households sector (S.14). The main data sources for estimating dwellings include the Building Register, PSFS, the HBS and the SBS survey.

In the households sector, estimates for the GFCF of dwellings are made for:

- Purchases and own construction of new dwellings;
- Purchases of existing dwellings;
- The expenditures of households on major repairs and reconstruction.

Estimates for purchases of new dwellings are based on information from the Register of Construction Works. To obtain the GFCF of dwellings, the number of square metres of new dwellings (separately for flats and houses) purchased by households is multiplied by the average square metre price of real estate transactions with new buildings. The price per square metre is obtained from the Land Board data on real estate transactions, depending on the year of construction of housing.

Estimates for major repairs and reconstruction are based on information from the Register of Construction Works. To obtain the GFCF of dwellings, the number of square metres renovated and permitted for use in dwellings owned by households (separately for flats, houses and garages) is multiplied by the average renovation price. The average renovation price per square metre is calculated as the total renovation of dwellings output divided by the renovated area of dwellings.

Purchases of existing dwellings are recorded on a net basis (acquisitions less disposals of dwellings). This means that when the existing asset changes owners, only ownership transfer costs, such as the intermediation fees of real estate agents, fees for notaries and legal services, and state duties, are taken into account. Fees for notaries are calculated using the number and value of notarised purchase-sale contracts of both movable assets and real estate (houses and flats).

It is assumed that the share of notary fees in contract values does not differ much from year to year, and therefore the notary fees can be estimated from the value of purchase-sale contracts. Agents' fees available from the supply side are calculated similarly to notaries' fees, as they are related to the value of purchase-sale contracts of houses and flats (described both as movable assets and as real estate). Information on state duties is taken from the PSFS system.

For non-financial enterprises, the main data source is the e-Land Register. From the e-Land Register, the following information is available:

- Tenements registered as dwellings;
- Form of ownership (for calculations, joint, sole and co-operative ownership is investigated); and
- Owners (private, legal and public person).

For the general government sector, the PSFS system – the main data source – provides the necessary breakdown of acquisitions and disposals of dwellings to calculate investments made for dwellings.

In 2021, the GFCF of dwellings amounted to 1,518.5 million euros, which is 16.1% of the total GFCF.

5.10.1.6. Buildings other than dwellings (AN.1121)

Buildings other than dwellings (AN.1121) are buildings other than dwellings, including fixtures, facilities and equipment that are integral parts of the associated structures and costs of site clearance and preparation. Public monuments identified primarily as non-residential buildings are also included. Buildings other than dwellings are estimated in all institutional sectors. All the main data sources used for estimating GFCF in institutional sectors offer a distinction for acquisitions and disposals of buildings other than dwellings. In 2021, these assets amounted to 29.4% of the total GFCF. For a detailed description of different data sources, see Section 5.10.2.

5.10.1.7. Roads and bridges (AN.11221)

Roads and bridges are separated from buildings other than dwellings (AN.1121). In Estonia, 'roads and bridges' are recorded only in the non-financial corporations sector (S.11) and in the government sector (S.13). For the non-financial corporations sector, the SBS survey is the main data source. The last time that the SBS included a separation of roads and bridges from buildings other than dwellings was in 2014. After 2014, roads and bridges are included in buildings and structures. 2021 estimates on roads and bridges are calculated using 2014 SBS proportions.

Calculations for the government sector are based on information from the PSFS system, which provides detailed information.

5.10.1.8. Other infrastructure and structures (AN.11222)

Information about the GFCF of other infrastructure and structures (except roads and bridges) is derived from the SBS survey and the PSFS system.

In 2021, investments in other infrastructure and structures amounted to 340.2 million euros.

5.10.1.9. Land improvements (AN.1123)

The value of land improvements is the value of actions that lead to major improvements in the quantity, quality or productivity of land, or prevent its deterioration.

§ 3.128 of ESA 2010 stipulates that major improvements to land include:

- a) reclamation of land from sea by the construction of dikes, sea walls or dams for this purpose;
- b) clearance of forests, rocks, etc. to enable land to be used in production for the first time;
- c) draining of marshes or the irrigation of deserts by the construction of dikes, ditches and irrigation channels; prevention of flooding or erosion by the sea or rivers by the construction of breakwaters, sea walls or flood barriers.

In Estonia, estimates for co-operatives of land improvements in the NPISH sector (0.39 million euros) are made on the basis of information derived from the statistical survey of non-profit institutions.

Decommissioning costs are also classified under land improvements as most of the terminal costs are related to the purpose of cleaning up landfills and mines/quarries to restore land to be used for other purposes. The main data source for decommissioning costs is the financial statements of enterprises owning landfills and mines.

In 2021, the value of decommissioning costs was 1.23 million euros.

5.10.1.10. Costs of ownership transfer on land (AN.11231)

The costs of ownership transfer in Estonia cover the costs of ownership transfer of land. In 2021, the costs of ownership transfer amounted to 19.9 million euros.

These costs are estimated for all institutional sectors.

For the non-financial corporations sector, estimates are based on SBS data. Information on financial corporations is derived from the survey of financial intermediation and auxiliary services. For the general government sector, estimates are based on PSFS information. For the households sector, the Estonian Land Board (ELB) is the main data source. However, as no information about activities is available from the ELB, SBS data are used additionally. For non-profit institutions, information from the survey of non-profit institutions is used.

5.10.1.11. Transport equipment (AN.1131)

Transport equipment is equipment for moving people and objects. In 2021, transport equipment accounted for 10.4% of the total GFCF in Estonia. These assets are estimated in all institutional sectors. All the main data sources used for estimating GFCF in institutional sectors offer a distinction for the acquisition and disposal of transport equipment. For a detailed description of the different data sources used, see Section 5.10.2.

5.10.1.12. Computers (AN.11321)

Similarly to transport equipment, computers are estimated in all institutional sectors. All the main data sources used for estimating GFCF in institutional sectors offer a distinction for the acquisition and disposal of computers. For a detailed description of different data sources used, see Section 5.10.2. In 2021, computers accounted for 1.1% of the total GFCF.

5.10.1.13. ICT equipment (AN.11322)

Information and communication technology (ICT) equipment (excl. computers) consists of devices using electronic controls and the electronic components used in the devices. Investments in ICT equipment are estimated in all institutional sectors. A detailed description of the data sources used for all institutional sectors is provided in Section 5.10.2. In 2021, ICT equipment accounted for 1.3% of the total GFCF.

5.10.1.14. Other machinery and equipment (AN.1139)

This type of assets include machinery and equipment not elsewhere classified. Other machinery and equipment are estimated in all institutional sectors.

All the main data sources used for estimating GFCF in institutional sectors offer a distinction for the acquisition and disposal of other machinery and equipment. For a detailed description of the different data sources used, see Section 5.10.2.

5.10.1.15. Weapons systems (AN.114)

Weapons systems are vehicles and other equipment such as warships, submarines, military aircraft, tanks, missile carriers and launchers, etc. Most single-use weapons they deliver are recorded as intermediate consumption. Weapons systems are estimated in the general government sector using information from the PSFS system.

5.10.1.16. Animal resources yielding repeat products (AN.1151)

This type of assets include animals whose natural growth and regeneration are under the direct control, responsibility and management of institutional units. They include breeding stocks (including fish and poultry), dairy cattle, draught animals, sheep or other animals used for wool production and animals used for transportation, racing or entertainment. In Estonia, animal resources yielding repeat products are estimated in all institutional sectors except the financial corporations sector. All the main data sources used for estimating GFCF in institutional sectors offer a distinction for the acquisition and disposal of other animal resources yielding repeat products. For a detailed description of the different data sources used, see Section 5.10.2. In 2021, the value of AN.1151 was 4.0 million euros.

5.10.1.17. Tree, crop and plant resources yielding repeat products (AN.1152)

These are trees (including vines and shrubs) cultivated for products they yield year after year, including those cultivated for fruits and nuts, for sap and resin and for bark and leaf products, whose natural growth and regeneration are under the direct control, responsibility and

management of institutional units. Tree, crop and plant resources yielding repeat products are estimated in the non-financial corporations and households sectors. The estimates are based on the SBS data. The value of tree, crop and plant resources yielding repeat products was 0.2 million euros in 2021.

5.10.1.18. Costs of ownership transfer on non-produced assets (AN.116)

§ 3.127 (6) of ESA 2010 stipulates that one part of the GFCF estimates consists of the costs of ownership transfer on non-produced assets, like land, contracts, leases and licenses. The value of these costs of ownership transfer is included with the non-produced assets to which they refer and so is not shown separately as part of AN.11. In the case of land transfers, the costs of ownership transfer on all land are included in AN.11231.

5.10.1.19. Research and development (AN.1171)

Research and development consists of the value of expenditure on creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications.

All R&D by specialised commercial research laboratories and institutes is considered as market output and is therefore estimated at market prices. No own-account R&D is estimated for NACE 72.

R&D for use within the same enterprise is valued on the basis of the estimated basic prices that would be paid if the research were sub-contracted commercially. If such information is not available, R&D is valued at total production costs (plus a mark-up – except for non-market producers – for net operating surplus or mixed income). A mark-up is included to reflect subcontracting and unsuccessful R&D for all market producers. The extent of the mark-up for all producers is derived from the operating surplus of NACE 72 for non-financial corporations. R&D by government units and non-profit research institutes is valued as the sum of costs of production. The revenue from the sale of R&D by non-market producers is considered as market output. It is classified as a different product than own-account R&D and is hence excluded from the capitalisation of R&D.

Own-account software is excluded from the capitalisation of R&D for financial corporations and in NACE 62 for non-financial corporations. See the detailed description provided in Section 3.19.

The recommendations of the Task Force on the Capitalisation of R&D in National Accounts (DMES 2012/11/08) are applied. Specifically:

- The intermediate consumption of R&D is excluded from the capitalisation of R&D.
- All government expenditure on freely available R&D is recorded as GFCF.
- The net operating surplus of market producers of own-account R&D is derived as a mark-up including unsuccessful R&D. The mark-up for unsuccessful R&D is included for all market producers.
- The single average service life of 10 years is used across the board as the exact nature of R&D can be hard to determine and would add little value in terms of the quality of the estimates.
- Geometric depreciation is used for the calculation of the CFC of R&D.

For a further description, see Section 3.19.

In 2021, the GFCF of R&D amounted to 370.6 million euros or 3.9% of the total GFCF.

5.10.1.20. Mineral exploration and evaluation (AN.1172)

With the development of the 1993 SNA, mineral exploration was introduced as a new category of produced asset as it represents an economic asset because it contributes to the stock of knowledge of sub-soil resources and allows those resources to be exploited for economic purposes.

The value of mineral exploration and evaluation should comprise expenditures on exploration for petroleum, natural gas, non-petroleum deposits, and subsequent evaluation of discoveries made. All expenditures on mineral exploration and evaluation, regardless of their success or failure, should be recorded as GFCF.

The evaluation is made:

- On the basis of accumulated accounts paid to other institutional units conducting the activity (market prices);
- On the basis of the costs incurred for exploration undertaken on own-account.

Data sources

To estimate mineral exploration and evaluation expenditures, two data sources were used:

- Estonian Environmental Board's data on mineral exploration authorisations;
- Fiscal year reports for enterprises performing the mineral exploration and evaluation activity (sales).

Exploration authorisation data

The Estonian Earth's Crust Act (23.11.2005) requires the submission of an application to the Environmental Board for geological investigation, geological exploration, or extraction.

For those three types of application, different kinds of authorisations are issued. The issued authorisation specifies the following information:

- Issue date
- End date
- Validity of the permit (months/years)
- Owner of the permit (with Business Register code)
- Enterprise performing the exploration (with Business Register code)
- Mineral resource to be explored/evaluated.

Any amendment to an issued authorisation is registered and can be tracked. This allowed compiling a comprehensive list of enterprises that had performed mineral exploration activities since 1995, as well as of those firms that had asked for a permit (i.e. who paid other institutional units conducting the activity).

The list of mineral exploration authorisations issued by the Ministry of the Environment and local government units is available online since 1 January 2001.

Mineral exploration and evaluation is undertaken by both enterprises specialising in this activity and on own account by enterprises whose principal activity is mineral extraction. In Estonia, there are three kinds of institutions involved in the mineral exploration activities:

- Geological Survey of Estonia (Eesti Geoloogiakeskus, EGK) (S.11, EMTAK M.M.71) explores all mineral resources available in Estonia. Their services cover a wide range of activities from applying for an exploration permit to applying for a permit for extraction of minerals; they offer full topographical survey of the quarry area, environmental impact assessments (including the natural, social and economic aspects), quarry development plans, hydro-geological test works and drilling. EGK has long experience in compiling geological maps of terrestrial and aquatic areas: they provide data for mineral resources, hydro-geological, quaternary deposits, environmental and special purpose maps. The Depository of Manuscript Reports provides reliable and comprehensive geological information for national and individual customer needs. The Drill Core Database contains over 1,800 objects from the years 1937–2009. Hydro-geological prospecting for groundwater and surface water is carried out for the purpose of identifying potential sources of drinking, agricultural, industrial, mineral etc. water in Estonia. They provide hydro-geological models and mapping, groundwater monitoring, monitoring plans, design of sanitary seals for water intake areas and design of wells, geological reports of wells, flow and quality tests, interpretation of analyses and expert opinions.
- The Mining Department of Tallinn University of Technology (S.13) has the license to carry out the following activities: mining, reuse of underground mines, geodetic and cartographic works.
- Enterprises belonging to EMTAK divisions M.B.05–09 (S.11).

Fiscal year reports

As a supplementary data source, fiscal year reports for enterprises performing mineral exploration are used, from which data on total sales and their sectoral breakdown are taken, with the aim to examine the share of mineral exploration activity in the enterprises' sales structure.

Additional estimates of GFCF might be obtained by surveying mining enterprises and enterprises supporting mining activities – a census of mining enterprises is desirable. At present, the EKOMAR questionnaire (enterprise's complex annual questionnaire) does not contain any specific questions on mineral exploration and evaluation activities as these are still included in "Other intangible assets".

In 2021, the value of mineral exploration was 6.1 million euros.

5.10.1.21. Computer software (AN.11731)

Computer software includes computer programs, program descriptions and supporting materials for both systems and applications software. Investments into computer software consist of purchased software and own-account produced software.

The estimates are made for all institutional sectors, except for the households sector (S.14).

In addition, separate estimates for own-account software are made. For more information, see Section 3.16. In 2021, the value of computer software was 1,598.4 million euros or 17.0% of the total GFCF.

In Estonia, recommendations from the GNP Committee on Software Measurement (CPNB/313 and GNIC/015-Rev.1) are followed, specifically:

- a) All data sources for the estimates of software are clearly identified.

For non-financial corporations, data are collected with the SBS survey Module H “Investments” under “Software”. No disposals of software are deducted from acquisitions because sales are expected to be zero since the service life of software is short.

In the financial corporations sector, the data sources and methodology of calculating the GFCF of intangible assets are described in Section 5.10.2.2.

In the households sector, no data sources on intangible fixed assets are available; therefore, no estimates on the intangibles of households are made.

Computer software is usually bought together with hardware; so, most of the software purchased by households is probably taken into account in total GFCF estimates as tangible fixed assets (item “Computers”).

For the general government sector, PSFS – the main data source for estimating GFCF – offer the necessary breakdown of data.

For all data sources, the concept of “software” is defined as follows: independent from hardware, computer programs and supporting materials for both systems and applications software. It also includes licenses for software.

However, it does not include hardware consultancy services. These costs are recorded separately under the costs of enterprises and they are not included in GFCF.

- b) There is a clear delimitation of GFCF and intermediate consumption. The main data sources used offer the necessary information.

GFCF includes expenditure on planning, design, programming, change of ownership, installation and testing.

Expenditure on extension or changes to the software system (e.g. new facilities, replacing parts of the software code, moving the software to another platform) is also capitalised.

The subcontracting of software services (custom software integrated in other software) is treated as intermediate consumption.

The maintenance and repair of software are treated as intermediate consumption.

All produced non-financial assets (consequently also purchases of software) used repeatedly or continuously in production processes for more than one year are taken into account.

- c) The secondary production of software by non-software industries (those not belonging to NACE 62) are included in the output of computer software (marketed and own-account GFCF).
- d) A separate estimate for the GFCF of own-account produced software has been made. For a detailed description, see Section 3.16.
- e) Non-market output also includes the CFC of software. Calculations are done for the general government and NPISH sectors. For a detailed description, see Section 4.12.

5.10.1.22. Entertainment, literary or artistic originals (AN.1174)

Entertainment, literary or artistic originals include original films, sound recordings, manuscripts, tapes, models, etc., on which drama performances, radio and television programmes, musical performances, sporting events, literary and artistic output, etc. are recorded or embodied. This includes works produced on own-account. In some cases, such as films, there may be multiple originals. The recommendations from the GNP Committee on Entertainment, Literary and Artistic Originals (AN.1174) (see GNIC/010 and GNIC/022) are followed. In particular, the following aspects are taken into account:

- a) Items considered for the GFCF of entertainment, literary and artistic originals meet the following general criteria:
 - i. originals are protected by copyright,
 - ii. originals are end products,
 - iii. originals are capitalised because their life length is more than 1 year,
 - iv. originals are not covered elsewhere in national accounts.
- b) Originals include:
 - v. cinematographic film, motion picture and video originals;
 - vi. television and radio broadcasting originals (TV and radio stock programmes: documentaries, drama, music, arts, history, education, if they satisfy the criteria above);
 - vii. literary originals (published literary works) with a separate copyright;
 - viii. artistic originals (musical works: composition and performance).

In Estonian national accounts, there are no estimates made for photographs, images and maps protected by copyright, due to the lack of such information.

- c) The following items are excluded from the GFCF of originals:
 - ix. Sections and unedited shots of films (that do not satisfy the copyright criterion),
 - x. TV and radio flow programmes (e.g. news and sport programmes, advertisements, usually used for less than one year),
 - xi. originals of newspaper and magazine articles (used for less than one year),
 - xii. advertising jingles (used for less than one year),
 - xiii. technical and architectural drawings and prototypes,
 - xiv. paintings, sculptures, antiques (recorded under valuables).

Statistics Estonia estimates investments in entertainment, literary and artistic originals for the non-financial corporations and general government sectors. The estimation methodology has been developed in accordance with the recommendations of the Task Force on Entertainment, Literary and Artistic Originals. Separate estimates are made for films, TV & radio “stock” programmes, literary and artistic originals (Recommendation 1 of the Task Force).

Films

Film originals include short and full-length cinematographic films, movies, DVD and video films produced in Estonia. The main data sources used include:

- 1) The statistical questionnaire “Film” collected by Statistics Estonia¹⁵. The data are gathered once a year on movies and video films produced, film production costs and revenues;
- 2) Annual reports of enterprises;
- 3) The Estonian Movie Database, providing information on the film production market in Estonia (<http://www.efis.ee/en>);
- 4) Additionally, the information of the International Movie Database (IMDB) about Estonian film producers and produced films (<http://www.imdb.com>). The questionnaire “Film” covers all enterprises whose main activities include film production, i.e. enterprises in NACE Rev. 2 Class 5911. When the methodology was developed, the total list of enterprises in NACE 5911 was examined.

The value of film originals is measured by the production cost approach, including a mark-up for operating surplus for market producers (Recommendation 3). The estimation procedure is presented in Table 5.26. The data on film production costs (both current expenditure and investments in fixed assets) are derived from the statistical questionnaire “Film”.

The estimation of film originals starts with the compilation of a total list of enterprises in NACE Class 5911. As the next step, enterprises producing television advertisements are excluded from the list of enterprises (as they do not produce originals) and consequently from the estimates for film originals. Film production costs are first adjusted by excluding the costs of investments in fixed assets (collected from the annual reports of enterprises for 2021).

Enterprises classified as belonging to Class 5911 and producing motion pictures, videos, television programmes (television series, documentaries etc.) were considered as producers of originals and were included in our estimates.

Additionally, enterprises providing production services such as operator services, animation (animated fragments inserted to film), sound editing, lighting etc., were regarded as non-producers of originals and were also excluded from our estimates to avoid double counting. The production costs of those enterprises accounted for about 12% of the total costs recorded with the questionnaire “Film” in 2021. The expenditures on these services are already included in the production costs of film originals.

The mark-up for net operating surplus was calculated on the basis of the SBS survey on film production enterprises in NACE Rev. 2 Class 5911. The average mark-up coefficient amounted to 1.136 in 2021.

The GFCF of cinematographic films, movies and video originals in 2021 was 20.1 million euros.

Table 5.26 Estimation procedure for film originals, 2021

	Item	Value
Film production costs, excluding investments, according to questionnaire “Film”, million euros	(1)	16.6
Share of film originals in film production costs, %	(2)	88%
Mark-up for NOS	(3)	1.1

¹⁵ All the enterprises in the field of film production are surveyed. The survey population is compiled on the basis of the Business Register for Statistical Purposes (enterprises with the main economic activity of “Motion picture and video production”) and on the basis of information from the Ministry of Culture and the Estonian Film Foundation.

	Item	Value
Value added tax	(4)	4.0
Cinematographic films, movies and video originals, million euros_	$(5) = (1) * (2) * (3) + (4)$	20.1

TV & radio stock programmes

Estimates for TV & radio originals include “stock” programmes (documentaries, drama, music, arts, history and education) protected by copyright (TF Recommendation 2). By definition, TV & radio “stock” programmes are suitable for repeat performances and are used for more than one year. TV & radio programmes are categorised as either “stock” or “flow” using information from the statistical questionnaire “Broadcasting organisations”. The data on personnel, finances and programming (by type of programme, language and producer) are collected from all licensed TV broadcasting organisations (except for cable and satellite TV channels) and from all licensed radio broadcasting organisations. Programmes are divided into in-house production, co-production, commissioned production and purchased programmes.

The value of TV & radio originals is measured by the production cost approach, including a mark-up for operating surplus (Recommendation 3). The estimation procedure by type of producer is presented in Table 5.27.

First, the total amount of programme production costs of broadcasting organisations is calculated from the total costs (intermediate consumption, compensation of employees, taxes on production), excluding the distribution costs of TV & radio programmes. For market TV & radio broadcasters (non-financial corporations sector S.11), the data on the total costs are derived from the annual SBS survey. For Estonian Public Broadcasting, classified as a non-market producer (general government sector S.13), annual data from the PSFS system are used. The share of the production costs of TV & radio programmes in total costs is calculated on the basis of data from the annual reports for market broadcasters and from the questionnaire “Broadcasting organisations” for public broadcasters.

The value of TV & radio originals is calculated as the total amount of programme production costs multiplied by the share of “stock” programmes in the total duration of broadcasts and also grossed up by the mark-up for operating surplus (only for market producers). The mark-up for net operating surplus was calculated on the basis of the SBS survey of enterprises engaged in NACE Rev. 2 activities with code 59 (Motion picture, video and television programme production) and code 60 (Programming and broadcasting activities). The average mark-up coefficient amounted to 1.136 in 2021.

The share of “stock” programmes in the total duration (hours) of broadcasts is obtained using information from the statistical questionnaire “Broadcasting organisations”. The yearly duration of “stock” programmes produced in-house as a share of the total duration of broadcasting is taken as a proxy indicator of the share of “stock” programmes.

The GFCF of television and radio broadcasting originals in 2021 was 7.4 million euros.

Table 5.27 Estimation procedure for television and radio broadcasting originals, 2021

	Item	Total	Type of producer		
			market producers		non-market producers
			TV	Radio	TV & Radio
Total production costs, with royalties, million euros	(1)				30.87
Royalties, million euros	(2)				3.47
Total costs, without royalties, million euros	(3)	76.4	36.6	8.6	30.1
Exclusion of distribution costs, %	(4)		86.4	89.7	87.42
Programme production costs, million euros	(5)=(3)*(4)/100	56.57	21.6	7.7	26.31
“Stock” programmes, %	(6)		1.55	2.24	24.37
Mark-up for NOS	(7)		1.136	1.136	-
TV & radio originals, million euros	(8)=(5)*(6)/100*(7)	7.4	0.56	0.2	6.65

Artistic originals

Artistic originals include composers’, musicians’, performers’, choreographers’ works and other works of art. The value of artistic originals is measured by using royalty flows and the formula recommended in the Report of the Task Force on Entertainment, Literary and Artistic originals (TF Recommendation 4):

$$W_j = H_j * (1+r_j-i_j),$$

where W_j is the present value of originals produced in year j ,

H_j is the sum of royalties paid in the total economy during the year j ,

r_j is the nominal growth rate of royalties compared with the previous year, and

i_j is the nominal interest rate used for discounting.

The growth rate of royalties and the market interest rate are calculated from a single year. Data on royalty flows for artistic works are available from the Estonian Authors’ Society (EAU), an organisation based on the voluntary union of composers, musicians, choreographers and authors of other works of art. The EAU represents its members in Estonia and foreign countries and distributes the fees to its members – Estonian residents and non-residents. Royalties paid to Estonian authors are taken into account in estimating the value of originals.

The GFCF of artistic originals in 2021 was 3.33 million euros (see Table 5.28).

Table 5.28 Estimation procedure for artistic originals, 2021

	Item	Value
Royalties, million euros	H	2.23
Growth rates of royalties, %	r	0.19
Interest rates, %	i	0.003
Value added tax, million euros	VAT	0.45
Artistic originals (1.R.901), million euros	$W = H \cdot (1 + r - i) + \text{VAT}$	3.33

Literary originals

The estimates for literary originals are based on royalty payments by book publishing enterprises and public lending right compensation paid by Autorihüvitusfond (Estonian Copyright Compensation Fund).

For book publishing enterprises (activity NACE 5811), total costs are derived based on data from the annual SBS survey. The total amount of royalty payments and license fees paid to authors and copyrights owners is estimated based on their annual reports for the years 2006–2011. The share of royalties and license fees in total costs in 2006–2011 was estimated at 7–12%, and the average percentage of the six-year period (11%) was used for estimating. Royalties and license fees paid to non-residents were subtracted, based on data derived from the BOP statistics.

The Copyright Compensation Fund pays compensation to authors and copyright owners for book loans and reproduction in public libraries. This is the so-called public lending right compensation, which is similar to royalties. The fees paid are based on the Copyright Act and legislation issued on the basis thereof. The Copyright Act applies to works:

- authored by an Estonian citizen or permanent resident;
- first published in Estonia and protected in accordance with international agreements.

The compensation for book loans was introduced in 2004, and the compensation for reproduction in 2006. The estimation procedure for literary originals is presented in Table 5.29.

The GFCF of literary originals in 2021 was 0.37 million euros.

Table 5.29 Estimation procedure for literary originals, 2021

	Item	Value
Total costs of publishing enterprises from SBS survey, million euros	(1)	3.6
Average percentage of royalties and license fees in costs, %	(2)	1.1
Value of royalties and license fees, million euros	$(3) = (1) \cdot (2)$	0.4
Imported royalties and license fees by publishing enterprises, million euros	(4)	0.1
Public lending right compensation, million euros	(5)	0.02
Value added tax	(6)	0.01
Literary originals, million euros	$(7) = (3) - (4) + (5) + (6)$	0.37

5.10.1.23. Other intellectual property products (AN.1179)

Other intellectual property products include new information, specialised knowledge, etc., not elsewhere classified, whose use in production is restricted to the units that have established ownership rights over them or to other units licensed by such units.

The analysis and consultations with colleagues dealing with business statistics showed that there are no such assets in Estonia.

5.11. Changes in inventories

Table 5.30 shows changes in inventories by different categories and indicates the main source and the estimation method used.

Table 5.30 Changes in inventories, 2021
(million euros)

Category	Final estimate	Sources and estimation methods
Materials and supplies	49.8	Structural Business Survey; annual data of agricultural, hunting, forestry and fishing enterprises; Public Sector Financial Statements
Work-in-progress	358.6	Structural Business Survey; annual data of agricultural, hunting, forestry and fishing enterprises; annual forest growth and felling data from the Estonian Environment Agency; annual forest pricing data from the State Forest Management Centre
Finished goods	-15.6	Structural Business Survey; annual data of agricultural, hunting, forestry and fishing enterprises
Goods for resale	-173.8	Structural Business Survey; annual data of agricultural, hunting, forestry and fishing enterprises; survey of financial intermediation and auxiliary services
Total changes in inventories	218.9	

Table 5.31 shows stocks at the beginning and at the end of the year by different categories of inventories for the reference year 2021.

Table 5.31 Stocks at the beginning and at the end of the year by type of inventory, 2021
(million euros)

Type of inventory	Stocks at the beginning of 2021	Stocks at the end of 2021	Change (w/o A.01, A.0211*)	Change of A.01	Change of A.0211	HG	Changes in inventories
	1	2	3 = 2 - 1	4	5	6	7 = 3 + 4 + 5 - 6
Work-in-progress (P.522)	978.6	1,457.4	478.7	-	2.3	-122.4	358.6
Finished goods (P.523)	733.3	787.8	54.6	-2.3	-	-67.9	-15.6

*Note: *There are no work-in-progress stocks at the beginning and at the end of the year for the activity A.01 and for standing timber A.0211.*

In our final annual calculations, i.e. in the supply and use tables (SUT), there are stocks at the beginning and at the end of the year of work-in-progress and of finished goods, as shown in Table 5.31. There are no stocks of materials and supplies (P.521) and of goods for resale (P.524)

in our final annual calculations. The SBS survey data contain the stocks of P.521 and P.524 at the beginning and at the end of the year.

In the SBS survey, data about opening and closing stocks of the same reference period are collected and the data of the same period are used to calculate changes in stocks. Opening stocks of inventories are not corrected to the level of closing stocks of inventories of the previous year, because the total volume of opening stocks in year t is not equal to the total volume of closing stocks in year t-1. This is mainly due to the use of a sample survey for compiling enterprise statistics.

Therefore, in annual national accounts, holding gains/losses are calculated according to SBS information. Holding gains/losses calculated on the basis of SBS survey data are used despite the fact that the distribution of products may change.

Table 5.32 is an excerpt from the Process Tables and shows the values derived from individual sources and the values of conceptual, exhaustiveness and balancing adjustments.

Table 5.32 Changes in inventories by sources and adjustments, 2021
(million euros)

	Total changes in inventories	Materials and supplies	Work-in-progress	Finished goods	Goods for resale
Sources	1,083.1	452.0	19.4	-60.2	671.9
..Surveys and censuses					
..Administrative records	5.2	5.2			
..Combined data	1,077.8	446.7	19.4	-60.2	671.9
..Extrapolations and models					
..Other					
Adjustments	-864.1	-402.2	339.2	44.6	-845.7
..Data validation					
..Conceptual (minus)	-496.5	-183.5	-47.1	-71.0	-194.9
..Exhaustiveness					
..Balancing	-367.6	-218.7	386.3	115.6	-650.8
Final estimate	218.9	49.8	358.6	-15.6	-173.8

In the case of the amounts shown in Table 5.32 in the row “Conceptual” for holding gains and losses, holding losses are with a positive sign and holding gains are with a negative sign. In addition, inventories of work-in-progress (P.522) in the row “Conceptual” include standing timber.

Data source for estimating changes in inventories

The estimations of changes in inventories for non-financial corporations are based primarily on annual data gathered from statistical sample surveys. Annual data are gathered with the SBS survey for most activities. Data concerning agricultural activities are gathered with the questionnaire “Annual economic indicators of agricultural, hunting, forestry and fishing enterprises”, while data concerning financial activities are gathered via the questionnaire “Financial intermediation and auxiliary services”.

The questionnaires provide information on the book value of inventories at the beginning and end of accounting periods by four types of inventories:

- Materials and supplies (P.521);
- Work-in-progress (P.522);
- Finished goods (P.523);
- Goods for resale (P.524).

Materials and supplies

Enterprises record the following items under materials and supplies: purchased materials and semi-finished products used as intermediate inputs in production of goods and services – industrial raw materials, fuel, building materials, packaging materials, production of spare parts and other supplies. Therefore, stock data on materials and supplies also include gold, diamonds etc. intended for industrial use and other production.

Military single-use items are treated as intermediate consumption and are not included in changes in inventories of materials and supplies. In the PSFS, these weapons are recorded as out-of-balance-sheet figures at the moment of acquisition under operating expenses.

Work-in-progress

Under work-in-progress, enterprises record the following items: basic and auxiliary production, work-in-progress of works or services, and their semi-finished products, unfinished repairs, as well as agricultural output. Enterprises record uncompleted fixed assets other than structures in changes in inventories, for which no additional special calculations are done in national accounts. Also, partially completed research for a legal or consultant's dossier as well as partially completed film productions and computer programs are included in work-in-progress. Uncompleted structures for which the buyer is unknown do not exist in Estonia. In Estonia, for uncompleted structures, the buyer is always known, because if there is no specific client then the owner is a real estate developer.

Furthermore, standing timber is recorded under work-in-progress. For the calculation of standing timber, annual data on forest growth and felling are derived from the Estonian Environment Agency (EEA) and the source for annual price data is the State Forest Management Centre (RMK). Standing timber estimations are done by Statistics Estonia's NA team.

Estonia's strategic oil and gas reserves are included in changes in inventories.

The source data on stocks and changes in inventories are available by industry at the 3- to 4-digit level of NACE Rev. 2 and by groups of number of employees (0–19, 20–49, 50–99, 100–249, 250–499, 500–999, over 1,000 employees). Changes in inventories and holding gains and losses by industry are calculated at the 2- to 3-digit level of NACE Rev. 2. Changes in inventories by industry are also calculated by groups of number of employees (0–19, 20–49, 50–99, 100–249, 250–499, 500–999, over 1,000 employees).

There is no direct information available on inventories by products; the commodity composition of stocks is estimated from the product structure of output or the material costs of the

corresponding accounting period. Data on the composition of output by products are provided by industrial production statistics (PRODCOM) or by the annual reports of enterprises. Structures for the inventories of work-in-progress and finished goods are assumed to be equivalent to that of output.

Estimations for changes in government sector inventories are based on data gathered through PSFS. State inventories (P.528) include only strategic goods like fuel, cereals, food products and medicines. The stock data for S.13 and changes in inventories for S.13 do not include military single-use items that are used in production for less than one year. All purchases of military single-use items by S.13 in year t are treated as intermediate consumption in year t , as described above.

For the S.14 sector, changes in inventories are calculated only for agriculture and standing timber. Information about agriculture is derived from the agricultural questionnaire, and standing timber is calculated based on the source data mentioned above.

For the S.15 sector, changes in inventories are not calculated.

Changes in inventories include stocks held abroad under the economic ownership of Estonian residents and exclude stocks held in Estonia under the economic ownership of non-resident units.

Borderline cases

The definitions used in the sources available for estimating changes in inventories are broadly in line with national accounts definitions. However, some valuation problems persist, which are described in more detail below.

Changes in inventories resulting from recurrent losses are not identified separately from changes attributable to regular business activities. The estimation of changes in inventories based on the source information available contains both changes in inventories resulting from regular business activities and recurrent losses of inventories.

The natural growth of animal and vegetable products, growth of standing timber and output of uncompleted structures for which the buyer is unknown are treated as inventories of work-in-progress (P.522) during the process, and transformed into inventories of finished products (P.523) when the process is completed.

Uncompleted structures for which the buyer is unknown are not included in changes in inventories of work-in-progress. In Estonia, for uncompleted structures, the buyer is always known, because if there is no specific client then the owner is a real estate developer.

If an economic unit dispatches goods to another EU Member State's warehouse with the intention of future sale, the Intrastat data should be submitted in both EU Member States, even if the owner of the goods does not change at the time of dispatch.

Forest gross increment data are available separately for the State Forest Management Centre (RMK), which manages approximately 40% of Estonia's forests, and for others, who are mainly private owners. The data include only forest land with managed and partially managed forest, as no management takes place in strictly protected forests. In the forest industry, changes in

inventories (P.52) are recorded for the net growth of standing timber and for felled timber in the non-financial corporations sector (S.11) and the households sector (S.14). Information about inventories of finished goods (P.523) is derived from SBS. The classification for standing timber inventories is CPA 2008 product 02.

To obtain the value of standing timber, first, the net growth has to be calculated from timber growth data, and thereafter multiplied by stumpage prices. The calculations are made for each tree species and timber assortment both for RMK and other owners.

Net growth is obtained from the gross increment by first deducting the total volume lost due to natural death, then dividing the data into categories using the felling assortment shares and then deducting the felling data according to the respective assortments. The result of the calculations is the net growth for every tree species and timber assortment.

The stumpage price is the amount paid per cubic metre of timber by the harvester to the owner of the timber resources. The stumpage prices are received by deducting felling costs from average roadside prices, and are used for calculating forest net growth value.

The value for the total net growth of standing forest in Estonia is obtained by multiplying the various net growths by their stumpage prices and by summing up across all the tree species and ownerships. As forest growth takes place mainly in spring and summer, the value of standing timber is calculated only in the second and third quarter of the year.

Practical methods used for estimating changes in inventories

The data sources used to estimate changes in inventories provide information by types of inventories.

- a) The estimates made by types of inventories are based on knowledge about the valuation method used in private accounting.

The information provided by the data sources is recorded in accordance with the general rules for accounting, which have been compiled by the Accounting Standards Board and stipulate the following:

- Inventories are to be recorded in the accounts at acquisition cost that consists of purchase costs, production costs and other costs incurred in bringing the inventories to their present location and condition.
- Inventories of materials and goods for resale are recorded at purchase costs that include customs duties, other non-deductible taxes and direct transport expenses related to the purchase of inventories.
- Inventories of finished products and work-in-progress are recorded at production costs that consist of direct and indirect costs related to production.
- Inventories are to be reported on the balance sheet at acquisition cost or net realisable value, whichever is lowest.

The inventories of goods, raw materials and finished goods withdrawn from inventories should be valued using either FIFO or weighted average cost flow assumptions, if specific costs related to the objects are not determinable.

In national accounts, according to ESA 2010, in order to achieve a valuation consistent with other transactions in products, the inventories of materials and goods for resale should be

valued at purchaser's prices and the inventories of finished goods and work-in-progress at basic prices. Thus, the valuation of stocks in source statistics is in line with ESA 2010 requirements for materials and merchandise inventories; however, adjustments need to be made to source data on the inventories of finished products and work-in-progress valued at production costs. Adjustments for valuation at basic prices (mark-up correction for operating surplus) are made using the ratio of production costs to sales of the reporting period by activities.

b) Stock holding periods are appropriately taken into account.

Stock holding periods are estimated based on the level of inventories at the end of the period compared to the revenue for the period for inventories of work-in-progress, finished goods and goods for resale. For the inventories of materials, inventories at the end of the period are compared to the amount of intermediate goods used for production.

Stock holding periods are available by industry at NACE Rev. 2 class level. For the classification by products, the following method is used.

For materials and supplies in 2021, the structure of intermediate consumption is used. For work-in-progress and finished goods in 2021, the structure of production is used. For goods for resale, the structure of SUT 2008 is used. The classification level for all types of inventories is CPA 2008 at the 2- to 3-digit level.

Opening and closing stocks are separately available in all types of inventories at NACE Rev. 2 class level and at the 2- to 3-digit level of CPA 2008.

c) Appropriate price indices are used.

Specific price indices are assigned to each product, depending also on the type of the inventory in question.

Producer price indices (PPI), consumer price indices (CPI) for the corresponding product groups, and construction indices are the main categories of indices applied for the revaluation of inventories. PPIs at the 2- to 3-digit level of NACE Rev. 2 are used for the revaluation of the stocks of output and materials. CPIs at the 6-digit level of COICOP are mainly applied to the stocks of goods for resale. Where possible, indices are weighted using the structure of inventories by groups of products. The product structure of inventories is estimated according to the product structure of output.

Changes in inventories are valued at the time of entering the inventories or of withdrawal from the inventories, as appropriate. The following is a description of how the valuation of inventories at the time of entering the inventories or of withdrawal from the inventories is ensured, using basic prices for own-produced goods and purchaser's prices for goods for resale.

Holding gains/losses estimation

Holding gains are estimated as the difference between changes in inventories at historical prices and estimated changes in inventories at the average current prices of a period. This is done during the process of transforming historical prices used in accounting to the current prices, as required by ESA 2010. The calculation methodology is described in more detail below.

Holding gains are calculated using a specific program in SAS Enterprise Guide which has been created in collaboration with our IT team. The program makes calculations on a quarterly basis. Annual results are equal to the sum of quarters. The holding gains calculation methodology is based on Eurostat's suggestions.

For the construction of deflators, there are three methods in use for all types of inventories: FIFO, quarterly weighted average and monthly weighted average. These methods are necessary to calculate indices at the beginning of the period and indices at the end of the period.

1) FIFO method

The FIFO method is assumed to be used by businesses as a basic method of cost assignment. In this case, the deflators used for the conversion of inventories into constant prices should reflect the price changes of goods acquired at different moments of time. For this purpose, assumptions about stock holding periods and the age structure of inventories are made.

Stock holding periods are estimated by activities for each type of inventory from the source data on inventories and sales or input costs according to the following formula:

$$\begin{aligned} & \text{Inventory turnover period (stock holding period) in months} = \\ & = \text{Level of inventories by the end of a period} / \text{Sales or materials expenses of a period} * \\ & \quad * \text{Number of months in a period.} \end{aligned}$$

Note: The turnover of work-in-progress, finished goods, and goods for resale is calculated using the sales of a period. The turnover of materials and supplies is calculated using the materials expenses of a period.

The corresponding monthly indices are weighted by the assumed age structure of inventories defined in accordance with estimated stock holding periods, as illustrated in Table 5.33.

Table 5.33 Age structure of inventories for various stock turnover periods

	Turnover period (in months)									
	>1.125	1.126-1.375	1.376-1.625	1.626-1.875	1.876-2.125	2.126-2.375	2.376-2.625	2.626-2.875	2.876-3.125	3.126-3.375
N	0.946	0.797	0.665	0.571	0.499	0.439	0.399	0.362	0.330	0.302
n-1	0.052	0.162	0.223	0.245	0.250	0.248	0.240	0.231	0.221	0.211
n-2	0.002	0.033	0.075	0.105	0.125	0.138	0.144	0.148	0.149	0.148
n-3	0.000	0.007	0.025	0.045	0.063	0.077	0.087	0.094	0.100	0.103
n-4	0.000	0.001	0.008	0.019	0.032	0.043	0.052	0.060	0.067	0.072
n-5	0.000	0.000	0.003	0.008	0.016	0.024	0.031	0.038	0.045	0.051
n-6	0.000	0.000	0.001	0.004	0.008	0.014	0.019	0.024	0.030	0.035
n-7	0.000	0.000	0.000	0.002	0.004	0.009	0.011	0.016	0.020	0.025
n-8	0.000	0.000	0.000	0.001	0.002	0.005	0.008	0.013	0.014	0.017
n-9	0.000	0.000	0.000	0.000	0.001	0.001	0.004	0.005	0.009	0.012
n-10	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.003	0.006	0.008
n-11	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.003	0.004	0.006
n-12	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.003	0.004
n-13	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.002	0.003
n-14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003
SUM	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Note: The table of turnover periods continues until the maximum value of turnover is 6.125.

2) Quarterly weighted average method

The formulas for calculating indices at the beginning and at the end of a period, i.e. quarter n , as quarterly weighted averages are the following:

$$IDX\_beginning_n = \frac{IDX_{n-1}^2 \cdot 3}{ITP_{n-1} \cdot IDX_{n-1} - ITP_{n-1} \cdot IDX_{n-2} + IDX_{n-1} \cdot 3},$$

$$IDX\_end_n = \frac{IDX_n^2 \cdot 3}{ITP_n \cdot IDX_n - ITP_n \cdot IDX_{n-1} + IDX_n \cdot 3},$$

where ITP stands for inventory turnover period and IDX for the quarterly average price index of quarter n , $n - 1$ or $n - 2$.

3) Monthly weighted average method

The formulas for calculating indices at the beginning and at the end of a period as monthly weighted averages are the following:

$$IDX\_beginning_n = \frac{IDX_{n-1} \cdot (ITP_{n-1}^2 \cdot PI_{n-1,1} + ITP_{n-1} \cdot (ITP_{n-1} + 1) \cdot PI_{n-1,2} + (ITP_{n-1} + 1)^2 \cdot PI_{n-1,3})}{(ITP_{n-1} + 1)^3 \cdot IDX_{n-1} - ITP_{n-1}^3 \cdot IDX_{n-2}},$$

$$IDX\_end_n = \frac{IDX_n \cdot (ITP_n^2 \cdot PI_{n,1} + ITP_n \cdot (ITP_n + 1) \cdot PI_{n,2} + (ITP_n + 1)^2 \cdot PI_{n,3})}{(ITP_n + 1)^3 \cdot IDX_n - ITP_n^3 \cdot IDX_{n-1}},$$

where ITP stands for inventory turnover period and IDX for the average price index of quarter n , $n - 1$ or $n - 2$. PI corresponds to the price index of quarter n , $n - 1$ or $n - 2$ for the first, second or third month in the quarter.

In order to determine which method – FIFO, quarterly or monthly average index – is used by each activity, a supplementary question about inventory accounting methods was asked in the SBS survey of 2003. As a result, the most widely used method for each activity was determined. According to the results of the survey, enterprises apply the FIFO and weighted average cost methods for the valuation of inventories in almost equal measure.

From 2019 onwards, SUT supplementary data about inventory accounting methods are estimated based on the SBS survey of 2019.

The following tables (5.34, 5.35 and 5.36) give numerical examples of the calculation of holding gains and losses as well as of changes in inventories excluding holding gains and losses, with the three different methods for deflation and with different types of inventories.

Table 5.34: Numerical example of calculation of holding gains and changes in inventories for goods for resale (NACE Rev. 2 G.47, product CPA 2008 14), 2021Q3

Period	Product CPA 2008	Activity NACE Rev. 2	Inventory type	Price index	Method	Stock at the beginning of period	Stock at the end of period	Turnover	ITP	Quarterly average price index (IDX)	IDX_beginning	IDX_end	Changes in inventories	Changes in inventories w/o HG/HL effect	Changes in inventories at current prices	Holding gains/losses
a	b	c	d	e	f	g	h	i	$j = h/i * 3$	k	l	m	$n = h/m - g/l$	$o = n * k$	$p = h - g$	$q = p - o$
2021Q3	14	G.47	P.524	1072	1	195.5	203.2	301.0	2.0	1.1	1.0	1.1	4.4	4.6	7.7	3.1

Note: The source for columns g, h and i is the SBS data. The columns g, h, i, n, o, p and q are in million euros.

Table 5.34 shows a numerical example of the calculation of holding gains and losses and changes in inventories for goods for resale for the activity NACE Rev. 2 G.47, i.e. retail trade, except of motor vehicles and motorcycles, for the product CPA 2008 14, i.e. wearing apparel. The price index 1072 in column e corresponds to the CPI of COICOP 03.1.2, i.e. garments. ITP in column j stands for inventory turnover period (stock holding period) in months. The indices at the beginning of the period and at the end of the period, i.e. columns l and m, are the sums of the weighted monthly price indices for the periods until 15 months back. The value of the ITP determines the appropriate weights for the period until 15 months back which are derived from Table 5.33.

Table 5.35: Numerical example of calculation of holding gains and changes in inventories for finished goods (NACE Rev. 2 C.26, product CPA 2008 26), 2021Q2 – 2021Q4

Period	Product CPA 2008	Activity NACE Rev. 2	Inventory type	Price index	Method	Stock at the beginning	Stock at the end of period	Turnover	ITP	Quarterly average price	IDX_begi nning	IDX_end	Changes in inventorie s	Changes in inventorie s w/o	Changes in inventorie s at	Holding gains/losse s
a	b	c	d	e	f	g	h	i	$j = h/i*3$	k	l	m	$n = h/m - g/l$	$o = n*k$	$p = h - g$	$q = p - o$
2021Q2	26	C.26	P.523	28	1	29.4	28.0	43.0	1.9	0.9	0.9	0.9	-1.9	-1.7	-1.4	0.3
2021Q3	26	C.26	P.523	28	1	28.0	28.4	49.2	1.7	1.0	0.9	1.1	-4.4	-4.5	0.4	4.9
2021Q4	26	C.26	P.523	28	1	28.4	14.0	54.5	0.8	1.1	1.1	1.1	-13.1	-14.4	-14.3	0.05

Note: The source for columns g, h and i is the SBS data. The columns g, h, i, n, o, p and q are in million euros.

Table 5.35 shows a numerical example of the calculation of holding gains and changes in inventories for finished goods for the activity NACE Rev. 2 C.26, i.e. manufacture of computer, electronic and optical products, for the product CPA 2008 26, i.e. computer, electronic and optical products. The price index 28 in column e corresponds to the PPI of NACE Rev. 2 C.26. ITP in column j stands for inventory turnover period (stock holding period) in months. The indices at the beginning of the period and at the end of the period, i.e. columns l and m, are the quarterly weighted averages.

Table 5.36: Numerical example of calculation of holding gains and changes in inventories for materials and supplies (NACE Rev. 2 C.16, product CPA 2008 02), 2020Q3 – 2021Q1

Period	Product CPA 2008	Activity NACE Rev. 2	Inventory type	Price index	Method	Stock at the beginning	Stock at the end of the period	Turnover	ITP	Quarterly average price	IDX_begi nning	IDX_end	Changes in inventorie s	Changes in inventorie s w/o	Changes in inventorie s at	Holding gains/loss es
a	b	c	d	e	f	g	h	i	$j = h/i * 3$	k	l	m	$n = h/m - g/l$	$o = n * k$	$p = h - g$	$q = p - o$
2020Q3	02	C.16	P.521	1112	1	61.5	62.5	127.1	1.5	1.2	1.2	1.2	0.8	0.9	1.0	0.06
2020Q4	02	C.16	P.521	1112	1	49.0	51.3	128.5	1.2	1.2	1.2	1.2	2.0	2.4	2.3	-0.05
2021Q1	02	C.16	P.521	1112	1	61.3	62.2	126.6	1.5	1.2	1.2	1.2	0.8	1.0	1.0	-0.05

Note: The source for columns g, h and i is the SBS data. The columns g, h, i, n, o, p and q are in million euros.

Table 5.36 shows a numerical example of the calculation of holding gains and changes in inventories for materials and supplies for the activity NACE Rev. 2 C.16, i.e. manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials, for the product CPA 2008 02, i.e. products of forestry. The price index 1112 in column e corresponds to the CPI of COICOP 04.5.4, i.e. solid fuels. ITP in column j stands for inventory turnover period (stock holding period) in months. The indices at the beginning of the period and at the end of the period, i.e. columns l and m, are the monthly weighted averages.

There is consistent recording of changes in inventories and holding gains/losses in the production, income and expenditure estimates. To achieve the consistent recording of changes in inventories, the holding gains of the inventories of finished goods, work-in-progress and goods for resale are removed from the estimates of output; the holding gains of the inventories of materials and supplies are added to intermediate consumption. Income estimates are dependent on expenditure estimates and recording is thus consistent.

5.12. Acquisitions less disposals of valuables

Valuables are non-financial goods that are not used primarily for production or consumption, do not deteriorate (physically) over time under normal conditions and are acquired and held primarily as stores of value.

Table 5.37 shows acquisitions less disposals of valuables.

Table 5.37 Acquisitions less disposals of valuables, 2021
(million euros)

Sector Product	Total	S.11	S.12	S.13	S.14
1.C.242	0.00				0.00
1.C.321	84.15	82.90	1.25	0.00	0.00
1.R.9099	0.63	0.00	0.00	0.63	0.00
Total	84.77	82.90	1.25	0.63	0.00

Estimates for acquisitions less disposals of valuables are made in the non-financial corporations sector, in the financial corporations sector, in the general government sector and in the households sector.

As the data sources do not offer a detailed breakdown of valuables, no distinction by types of goods (AN.131–AN.133) is made. However, a distinction by three separate products is made:

- Product 1.C.242 includes precious metals, unwrought or in semi-manufactured forms, or in powder form.
- Product 1.C.321 includes coins, precious or semi-precious stones; jewellery and related articles.
- Product 1.R.9099 includes original works of painters, graphic artists and sculptors; museum collections.

Data sources

The following provides a description of the main data sources and the estimation methods used.

- a) In the non-financial corporations sector, the SBS survey is the data source used, as it covers also the acquisition or disposal of these types of goods by jewellers and art dealers. The SBS survey also covers the acquisition or disposal of these goods by enterprises whose principal or secondary activity does not involve the production of or trade in such types of goods. Also, information about valuables is derived from the annual data of agricultural, hunting, forestry and fishing enterprises.
- b) In the financial corporations sector, statistical surveys of financial intermediaries, financial auxiliaries and insurance companies are the main data sources used. Information about the acquisition or disposal of non-monetary gold, silver, etc. by the

central bank is derived directly from the BOP of Eesti Pank. In 2021, Eesti Pank did not acquire or dispose of non-monetary gold, silver, etc. The BOP also covers information about transactions in precious stones and metals (AN.131) traded on international bullion markets. Goods not recorded in official ITGS and not crossing the free circulation area but which are recorded in balance of payments transactions, such as precious stones and metals purchased or sold by residents in international bullion markets, are added. The enterprise survey conducted by Eesti Pank is the main data source used here.

- c) In the general government sector, data on valuables are available in the PSFS, which also cover the acquisition or disposal of these types of goods by museums.
- d) For the households sector, the estimations of acquisitions less disposals of valuables are made on the basis of information from the main seller of investment gold in Estonia. At the present moment, the valuables of households consist only of investment gold. The amount of investment gold is calculated based on the figures of the main seller of investment gold in Estonia.
- e) Non-profit institutions are generally small organisations and probably do not own any valuables or their amounts are negligible. Therefore, no data on valuables are collected with the survey of non-profit institutions.

Table 5.38 is an excerpt from the Process Tables and shows the values derived from different types of sources, and the values of conceptual, exhaustiveness and balancing adjustments.

Table 5.38 Acquisitions less disposals of valuables by sources and adjustments, 2021 (million euros)

	Acquisitions less disposals of valuables
Sources	84.8
..Surveys and censuses	
..Administrative records	83.5
..Combined data	1.2
..Extrapolations and models	
..Other	
Adjustments	
..Data validation	
..Conceptual	
..Exhaustiveness	
..Balancing	
Final estimate	84.8

5.13. Exports of goods

The estimates of the exports of goods are based on the International Trade in Goods Statistics (ITGS) produced by Statistics Estonia and the BOP compiled by Eesti Pank. In national accounts (NA), the estimates of the exports of goods follow the same concepts as the Balance of Payments (BOP).

Table 5.39 shows intra-EU and extra-EU exports of goods in the BOP.

Table 5.39 Exports of goods, 2021

	Value, million euros	% in total
Total	16,419.6	100.0
..Intra-EU	11,760.0	71.6
..Extra-EU	4,659.6	28.4

As seen from Table 5.39, in 2021, the exports of goods in the BOP amounted to 16,419.6 million euros. Intra-EU exports of goods constitute 71.6% of the total exports of goods, while the corresponding share of extra-EU exports of goods is 28.4%. As all BOP items are compiled based on a breakdown by country, deriving information on any country or group of countries from raw data poses no problems.

The compilation of Balance of Payments data based on intra-EU and extra-EU trade is described, including their completeness with respect to the coverage of all exports of goods and any adjustments needed.

The exports of goods in the NA and the BOP cover export transactions with goods for which a change of ownership occurs between residents and non-residents. The estimates of the exports of goods are based on the special trade system of official ITGS produced by Statistics Estonia, and complemented by adjustments made by Eesti Pank to reflect the BOP concepts. In the national accounts, the estimates of the exports of goods follow the same concepts as in the BOP.

For the calculations, as stipulated in ESA 2010 § 9.48e, NA and BOP use Intrastat (Intra-EU trade), customs declarations (Extrastat Extra-EU trade) and Eesti Pank's enterprise survey as the main data sources. The change of ownership basis used for the BOP means that goods entries will have a time of reporting consistent with the corresponding financial flows. The BOP uses ITGS as an input for compiling the goods account. ITGS are based on the Intrastat survey and customs declarations (Extrastat Extra-EU trade) where movements of goods have been recognised in accordance with the time of reporting. ITGS also include estimates concerning the share of exports and imports which are below the threshold.

Eesti Pank's enterprise survey collects data on merchanting, non-monetary gold and other goods purchased and/or sold abroad for own use and goods procured in ports by carriers. Goods entering or leaving the territory illegally are estimated by Statistics Estonia (for a more detailed description, see Section 7.2.3.2.). The same estimates are included in the BOP.

The production of official ITGS by Statistics Estonia draws on several data sources:

- Customs declarations (Extrastat) are used for non-EU countries and are collected by the Tax and Customs Board.
- Statistical surveys (Intrastat) are used by Statistics Estonia for collecting data about trade between EU Member States.
- Statistical surveys are used for goods which are not subject to customs clearance (e.g. exports of electrical energy, or fish caught in foreign waters).

The exports of goods in ITGS and the BOP are valued at FOB prices, which include the value of the goods and the cost of insurance and transportation to the border of the exporting country. The FOB value is equivalent to purchaser's prices.

Changes and adjustments are made to official exports data by Eesti Pank when the BOP is compiled, and the most important changes and adjustments are as follows:

- a. The exports of goods for processing abroad or after processing in Estonia are eliminated from foreign trade statistics, using the 2-digit Nature of Transaction code (NoT codes 41, 51, 52 are used).
- b. The purchase and sale of goods under merchanting is added (these are goods that resident merchants purchase from one foreign country and sell on to the residents of another foreign country without the goods entering the territory of Estonia); under the BPM6 methodology, the purchase of goods is recorded as negative credit and the sale of goods as positive credit in the BOP goods account.
- c. In the case of factoryless goods production, processing is 100% outsourced and no physical flow takes place between the resident enterprise and its trading partner. If a non-resident enterprise purchases production services from a resident enterprise, it is recorded as export of services.
- d. The sale of goods not covered in foreign trade statistics, i.e. goods not crossing the country's frontier but which have been Balance of Payments transactions (such as ships sold in foreign ports), is added.
- e. Goods sold for means of transport abroad, such as fuel, provisions and merchandise, are added.
- f. Oil products, oil chemicals and liquid gas in Estonian exports of goods are partly eliminated from BOP and NA statistics, using a 4-digit CN code and a 2-digit Nature of Transaction code.
- g. Quasi-transit exports are eliminated from BOP and NA statistics. Quasi-transit is an operation whereby goods are imported to Estonia by non-resident enterprises from EU Member States, filling in customs declarations in Estonia, and subsequently dispatched to another country. These enterprises receive a quasi-transit identifier in the ITGS database.

This treatment of export is internal, to achieve consistency between the NA and industry statistics (PRODCOM).

There are several companies with an oil terminal in Estonia, which are involved in the loading and storage of light oil products, oil chemicals and liquid gas. These terminals accept oil products in railway tank cars, store them in reservoirs and load them on to vessels.

One main company, for example, is registered in the Business Register of the Ministry of Justice as engaging in the storage and warehousing activity. According to the annual report submitted to the Business Register, the main activity of the company is the organisation of the transit of oil products, storage and warehousing. In the Business Register for Statistical Purposes, this company is classified under supporting and auxiliary transport services, and, in the SBS survey, the company reports its income as coming mainly from transit services and the rental of tanks.

However, in ITGS (Intrastat and Extrastat), the company declares very large amounts of imports and exports of oil products. The imports of refined oil products (fuels) are declared as mainly for inward processing or as normal imports and the respective exports as re-exports after inward processing. During inward processing, the quality of the fuel is changed by adding specific components.

According to the methodology of industry statistics (PRODCOM), the above-mentioned processing (oil blending on vessels or in bunkers) is not considered as production. In

PRODCOM, processing is treated as a manufacturing service which covers operations (transformation, assembly enhancement, renovation, modification or refining) with the objective of producing a new or a considerably improved item. Processing requires a contract between the principal and subcontracting enterprises, where the principal enterprise pays a fee to the contractor for the processing, sells the final products and is responsible for all risks. In the NA, we believe that these kinds of transactions are transit trade transactions and not transactions with goods for processing.

The quarterly survey of enterprises conducted by Eesti Pank is the main data source for adjustments in exports (see Section 10.4). The survey population is updated every quarter, using many data sources (e.g. ITRS, ITGS, foreign trade in services database, Business Register, the media etc.).

Exports of goods upon transfer of economic ownership, regardless of the corresponding physical movement

- a. Recording exports of goods for processing.
- b. Recording exports of goods for merchanting.
- c. Factoryless goods production is not recorded in International Trade in Goods Statistics in Estonia, because ITGS cover only physical flow of goods. In the case of factoryless goods production, processing is 100% outsourced and no physical flow takes place between the resident enterprise and its trading partner.

Exports of goods between affiliated enterprises and in cases where goods do not cross the border of the country

- a) Deliveries between affiliated enterprises if the establishment receiving the goods assumes responsibility for making the decisions about the levels of supply and prices at which their output is delivered to the market (see § 3.163 of ESA 2010).

In the exports of goods, deliveries between affiliated enterprises are based on International Trade in Goods Statistics. ITGS record all goods which are added to or subtracted from the stock of material resources of a state by leaving the Estonian economic territory. Basically all moveable goods leaving Estonia, including electricity and gas, are recorded. Goods bought from a non-resident for resale to another non-resident without crossing the country's frontier are recorded as goods sold under merchanting.

- b) Cases without goods crossing the country's frontier as listed in § 3.164 of ESA 2010;

Exports of goods occur without the goods crossing the country's frontier in the following examples:

- Goods produced by resident units operating in international waters are sold directly to non-residents in foreign countries. Examples of such goods include fish, crustaceans, molluscs, etc; salvages and other goods which are caught or taken on the board of a ship in the open sea. Sea products which are caught in the open sea and sold in harbours of other states or to the ships of other states are included in the exports of goods. The data sources used (Extrastat and Intrastat) offer the necessary information.

- Transportation equipment or other movable equipment not tied to a fixed location. The data sources used (Extrastat and Intrastat surveys, Eesti Pank's enterprise survey, ship and aircraft register) offer the necessary information.
- Goods after changing ownership, if they are lost or destroyed before they have crossed the frontier of the exporting country, are included in foreign trade statistics. The data sources used (Extrastat and Intrastat surveys) offer the necessary information.
- Merchanting, i.e. the purchase of goods by a resident from a non-resident and the subsequent resale of the goods to another non-resident, without the goods entering the merchant's economy. This information is collected by Eesti Pank.

For merchanting, the treatment according to paragraphs 3.164d, 9.48e and 18.38–18.43 of ESA 2010 applies. The information about gross and net exports of goods under merchanting is collected from enterprises. The main data source is the enterprise survey conducted by Eesti Pank. Respondents are asked to report both purchases from and sales to non-residents abroad. There are guidelines worked out for respondents. Goods purchased and/or sold abroad for own use are reported separately and are not a part of merchanting.

A numerical example of the compilation of merchanting in the BOP is provided in Table 5.40.

Table 5.40 Merchanting in BOP, 2021

(million euros)

Component	Description	Bookkeeping	Value, million euros
1112	Net exports of goods under merchanting	Credit	464.0
11121	Goods acquired under merchanting (negative credit)	Credit	-4,277.9
11122	Goods sold under merchanting	Credit	4,741.9

Exclusions and inclusions

- c) The exclusion of goods sent abroad for processing without change of ownership (see § 1.51f of ESA 2010);

In accordance with ESA 2010 § 1.51f, goods sent abroad for processing and returned after processing without a change in ownership are excluded from exports and imports of goods according to specific regimes shown in customs data and information received via Intrastat surveys. The processing fee is included in the exports of services using Statistic Estonia's ITSS survey data, in accordance with BPM6 and ESA 2010 principles.

In Estonia, the goods for processing calculated according to ESA 2010 §§ 18.33–18.37 in NA cause inconsistency with the ITGS. Exports and imports of goods in NA are not equal to IMTS (International Merchandise Trade Statistics) data. Data about goods for processing are removed in NA exports and imports of goods, but the ITGS continue to show the gross value of the exports for processing and returning imported processed goods. NA and BOP data are consistent with each other.

The transaction codes used for identifying the processing of goods are shown in Table 5.41.

Table 5.41 Transaction codes used for identifying the processing of goods

Transaction code	Description
41	Operations with a view to processing under contract (no transfer of ownership to the processor). Goods expected to return to the initial Member State of dispatch/country of export.
42	Operations with a view to processing under contract (no transfer of ownership to the processor). Goods not expected to return to the initial Member State of dispatch/country of export
51	Operations following processing under contract (no transfer of ownership to the processor). Goods returning to the initial country of export.
52	Operations following processing under contract (no transfer of ownership to the processor). Goods not returning to the initial country of export.

The NoT code is a occasionally missing in Extrastat data. For this reason, Statistics Estonia has implemented a data validation system to confirm data and make corrections. Statistics Estonia maintains a specific list of traders involved in the processing of goods. The traders must obtain specific permission for processing activities from the customs authority. Information about the traders involved in processing is received from the Estonian Tax and Customs Board. This is the basis for the list of traders.

In total, there are fewer than 100 processing companies in the Extrastat data, and the data of processing companies are checked automatically every month. Companies are contacted if there are discrepancies, i.e. the company is carrying out non-processing transactions, or if a new company carrying out processing transactions is detected. In that case, the list is updated, if necessary, and the data are validated. Each trader is also contacted by Statistics Estonia to clarify the nature of their transactions whereas Extrastat data are adjusted, if needed. Statistics Estonia also contacts the traders and customs agents to emphasise the importance of NoT and ask them to fill in the indicator. Consultations are carried out with the Estonian Tax and Customs Board and Eesti Pank to coordinate the methodological approach and discuss individual cases.

According to § 18.24 of ESA 2010, if goods sent abroad for processing do not change economic ownership, the fee for processing appears in imports of processing services. In 2021, this amount was 1,682.5 million euros. If goods arrived for processing without changing economic ownership, the fee for processing is included in exports of processing services. In 2021, this amount was 2,090.8 million euros.

d) The transactions listed in § 3.165 of ESA 2010;

According to the transactions listed in § 3.165 of ESA 2010, all exports of goods are included in Estonian exports statistics. The data sources (Extrastat and Intrastat surveys) offer the necessary information.

The exports of goods include transactions made between residents and non-residents with the following types of goods:

- non-monetary gold;

As can be seen in Table 5.42, the value of exports of non-monetary gold in the BOP in 2021 amounted to 114.6 million euros.

Table 5.42 Exports of non-monetary gold in BOP, 2021

Exports of non-monetary gold	Value, million euros
Total	114.6

- silver bullion, diamonds and other precious metals and stones;

The values of exports of silver bullion, diamonds and other precious metals and stones in 2021 are given in Table 5.43.

Table 5.43 Exports of silver bullion, diamonds and other precious metals and stones, 2021

Commodity (CN)	Description of the commodity	Value, million euros
Total		116.2
7102	Diamonds, whether or not worked, but not mounted or set (excl. unmounted stones for pick-up styluses, worked stones, suitable for use as parts of meters, measuring instruments or other articles of chapter 90)	0.0
7103	Precious stones and semi-precious stones, whether or not worked or graded, but not strung, mounted or set, ungraded precious stones and semi-precious stones, temporarily strung for convenience of transport (excl. diamonds and imitation precious stones and semi-precious stones)	0.1
7106	Silver, incl. silver plated with gold or platinum, unwrought or in semi-manufactured forms, or in powder form	2.6
7108	Gold, incl. gold plated with platinum, unwrought or not further worked than semi-manufactured or in powder form	113.5

- paper money and coins not in circulation and unissued securities (valued as goods, not at face value);

These are accounted for only in the imports of goods. For a detailed description, see Section 5.15.).

- electricity, gas and water;

In Estonia, there are no exports and imports of water (except bottled water); there are only exports or imports of gas and electricity. The value of exports of electricity and gas can be seen in Table 5.44.

Table 5.44 Exports of gas and electricity, 2021

Commodity (CPA)	Description of commodity	Customs procedure	Transaction code	Value, million euros
Total				620.5
062	Natural gas, liquefied or in gaseous state	1000	11	147.0
062	Natural gas, liquefied or in gaseous state	4000	11	-
351	Electricity, transmission and distribution services	1000	11	473.5
351	Electricity, transmission and distribution services	4000	11	-

- livestock driven across frontiers;

Livestock driven across frontiers is recorded as exports of goods if it is a commercial transaction. Statistics Estonia compares their data on livestock driven across frontiers to the database of the Estonian Agricultural Registers and Information Board (ARIB). According to ARIB, there has been no evidence of these kind of transactions in Estonia. Thus, in conclusion, the transaction is considered as not relevant for Estonia.

- parcel post;

Parcel post is accounted for under the transport code 5 (i.e. postal consignment). Only partial data are available (for intra-EU trade, the indicator was collected on a voluntary basis). The value of exports of parcel post is given in Table 5.45.

Table 5.45 Exports of parcel post, 2021

Transport code	Description	Value, million euros
5	Postal consignment	9.6

- government exports including goods financed by grants and loans;

The value of government exports including goods financed by grants and loans is given in Table 5.46.

Table 5.46 Government exports, 2021

Government exports	Value, million euros
Total	2.7

- goods transferred to or from the ownership of a buffer stock organisation;

There is no separate CN code for strategic stocks. All these goods are recorded under other CN codes (e.g. foods, fuels, etc.).

- goods delivered by a resident enterprise to its non-resident affiliates, except for goods for processing;

Exports and imports of goods between a resident enterprise and its non-resident affiliates are covered by ITGS in Estonia. However, it is not possible to determine how much of a resident's trade is with its non-resident affiliate enterprise because trade cannot be distinguished by trading partners. There is information available about which Estonian residents have affiliates abroad, but it is not possible to separate transactions with affiliates from these residents' total export and import volume.

- goods received by a resident enterprise from its non-resident affiliates, except for goods for processing;

These transactions are accounted for only in the imports of goods. For a detailed description, see Section 5.15.

- smuggled goods or products not reported for taxes like import duties and VAT;

These transactions are accounted for only in the imports of goods. For a detailed description, see Section 5.15.

- other unrecorded shipments, such as gifts and those of less than a stated minimum value;

The stated minimum value of goods carried by private passengers leaving the European Union in Extrastat was 1,000 euros or 1,000 kilograms in 2021. Until 30 June 2021, for postal deliveries from third countries, if the purchase value was less than 22 euros, there was no need for a customs declaration, except for alcohol, tobacco and perfumes. The same applied to gifts, i.e. goods received free of charge, if their customs value was less than 45 euros. Beginning from 1 July 2021, all parcels – purchases from online stores as well as gifts from other natural persons – arriving from outside of the European Union need to be declared regardless of their value. If a shipment is unrecorded, then there is no customs declaration; hence, it is also missing from the statistics on exports and imports of goods.

Intrastat data are based on statistical declarations. The questionnaires must be submitted by enterprises who are registered in the VAT payers register and whose turnover for trade with EU Member States exceeds the statistical threshold set for the reporting year. The statistical threshold is set by Statistics Estonia on the basis of the foreign trade data from the previous year. In the calculation of thresholds, the turnovers of dispatches and arrivals are examined separately. In 2021, the value of the statistical threshold was 0.13 million euros for dispatches of goods and 0.23 million euros for arrivals of goods.

Therefore, companies with a lower foreign trade turnover are not obliged to submit data. The missing data are replaced with estimations which are calculated on the level of 2-digit commodity codes and partner country level. The estimations are based on VAT declarations.

e)The exclusion of all cases listed in § 3.166 of ESA 2010.

All the cases listed in § 3.166 of ESA 2010 are excluded in Estonian exports statistics. The data sources (Extrastat and Intrastat surveys) offer the necessary information.

§ 3.166 of ESA 2010 stipulates that the imports and exports of goods exclude the following goods which nevertheless may cross the national frontier:

- goods in transit through a country;
- goods shipped to or from a country's own embassies, military bases or other enclaves inside the national frontiers of another country;
- transportation equipment and other movable kinds of equipment which leave a country temporarily, without any change of economic ownership, e.g. construction equipment for installation or construction purposes abroad;
- equipment and other goods which are sent abroad for processing, maintenance, servicing or repair; this applies also to goods processed to order abroad when a substantial physical change in the goods is involved;
- other goods which leave a country temporarily, being generally returned within a year in their original state and without change of economic ownership.
- goods on consignment lost or destroyed after crossing a frontier before change of ownership occurs.

The recommendations from the GNP Committee Task Force on Intrastat (CPNB 203) related to exhaustiveness are applied continuously. In particular:

- a) In Estonia, official foreign trade statistics for the country are comparable with the data of other trade partners. Eurostat compares the monthly statistics on the exports of goods between Member States and informs Estonia of the main problems. Based on the information received, the problems are solved immediately. In addition, Statistics Estonia consistently deals with the issues with foreign trade statistics reported by Eurostat.
- b) The use tables for imports and domestic output are compiled as an integrated part of the supply and use table framework. Thus, data on imports are checked against data on domestic use, and data on domestic output against data on exports on an annual basis upon balancing the supply and use tables. A more detailed description of the compilation process of the SUT is provided in Chapter 6.

5.14. Exports of services

Data on the exports of services are derived from the BOP statistics compiled by Eesti Pank. Transactions are recorded on an accrual basis, i.e. at the time the transaction was concluded between parties, regardless of money not having actually been received or paid. Transactions are recorded at market prices. The 6th edition of the IMF's Balance of Payments Manual provides the methodological basis for the compilation of the BOP.

Next, Table 5.47 is provided showing intra-EU and extra-EU exports of services.

Table 5.47 Exports of services, 2021

	Value, million euros	% in total
Total	8,622.3	100.0
..Intra-EU	5,401.3	62.6
..Extra-EU	3,221.0	37.4

Next, the compilation of the Balance of Payments data on both intra-EU and extra-EU export of services is described, including the completeness of data with respect to the coverage of all exports of services and any adjustments needed.

Data on the exports and imports of all items of services are collected with a full breakdown by country, so the statistics can be compiled on any composition of country groups, including intra-EU and extra-EU countries.

Starting from 2021, the main data source for compiling exports and imports of services is Statistics Estonia's services survey for enterprises (ITSS survey). An exemption threshold is established for each reference year and enterprises above the threshold must submit quarterly questionnaires. In 2021, the exemption threshold was 100,000 euros and questionnaires were sent to 6,396 respondents. For enterprise survey non-response, estimations are compiled for intra-EU trade by Statistics Estonia based on taxation (VAT and VIES) data. The ITSS survey uses the new classification of services developed by Statistics Estonia in cooperation with Eesti Pank.

In the Balance of Payments, data on services items are compiled mainly based on the ITSS survey and supplemented by Eesti Pank with data from the ITRS (International Transaction Reporting System) for enterprises not included in the ITSS survey. Mobile positioning data are used for travel services, and the PSFS (Public Sector Financial Statements) system is used for government services. The MOSS (Mini One Stop Shop; from 1 July 2021 OSS) data are used to supplement data for different types of services. The data are further supplemented with information from various sources and with estimates.

The ITRS was introduced in 1994 and given the limits of settlement data (no accrual flows, etc.). The system is used mainly as a supplementary data source but also for imputing missing data and for checking. The other main inter-agency data sources include the databases maintained by the Statistics Department of Eesti Pank (data of the survey on credit institutions and the survey on Eesti Pank), which provide data relating to external sector statistics on the financial sector and the monetary authority sector.

Important additional data sources used for the compilation of statistics on services include the Business Register of Estonia, which provides monthly updates on the register of legal entities; the Ministry of Finance; the Ministry of Foreign Affairs; and others. In addition to the general reporting system, there are also some additional sources used for tourism statistics. The number of non-residents' visits to Estonia and the number of visits abroad by residents are estimated using mobile positioning data provided by OÜ Positium (this includes a geographical breakdown) under an outsourcing agreement.

The data sources for the different categories of the Balance of Payments services account (exports and imports) are described in Table 5.48. For more detailed information about the various data sources, see Chapter 10.

Table 5.48 Data sources by different categories of services

		ITSS survey	ITRS	Other surveys (credit institutions, Central Bank)	Administrative data								Statistics on investment funds by FSA	Partner country information	Estimations / models
					Statistics on border crossings	Survey on expenditure of inbound and outbound tourists	Ministry of Education and Research	Accommodation statistics by SE	Mobile positioning data	MOSS (Mini One Stop Shop)	ITGS (International Trade in Goods Statistics)	Public Sector Financial Statements database			
Manufacturing services on physical inputs owned by others	Credits	X									X				
	Debits	X									X				
Maintenance and repair services	Credits	X	X												
	Debits	X	X												
Transport	Credits	X	X									X			X
	Debits	X	X	X						X	X	X			X
Travel	Credits	X	X		X	X	X	X	X	X				X	X
	Debits	X	X		X	X	X	X	X	X				X	X
Construction	Credits	X	X												
	Debits	X	X	X								X			
Insurance and pension services	Credits	X													X
	Debits	X		X							X	X			X
Financial services	Credits	X	X	X											X
	Debits	X	X	X								X	X		X
Charges for use of intellectual property	Credits	X	X												
	Debits	X	X												
Telecommunications, computer and information services	Credits	X	X	X						X		X			
	Debits	X	X	X						X		X			
Other business services	Credits	X	X	X						X		X			
	Debits	X	X	X						X		X			
Personal, cultural and recreational services	Credits	X	X									X			X
	Debits	X	X									X			X
Government goods and services, n.e.c.	Credits											X			X
	Debits											X			X

The total value of the exports of services in 2021 was 8,622.3 million euros. The most important types of services in exports were other business services, transport, and telecommunications, computer and information services which together had a share of around 76.3% of the total exports of services. 62.6% of services were exported to EU Member States. The most important partner countries included Finland, Germany, Sweden, United Kingdom and USA which together accounted for 44.2% of the total exports.

Data on the exports of services distinguished by categories of the Balance of Payments are presented in Table 5.49.

Table 5.49 Exports of services by category of BOP, 2021

	Total		Intra-EU		Extra-EU		Share of intra-EU exports in total value, %
	Value, million euros	%	Value, million euros	%	Value, million euros	%	
Services – total	8,622.3	100.0	5,401.3	100.0	3,221.0	100.0	62.6
Manufacturing services on physical inputs owned by others	323.5	3.8	283.8	5.3	39.7	1.2	87.7
Maintenance and repair services	215.8	2.5	153.2	2.8	62.6	1.9	71.0
Transport	2,392.4	27.7	1,363.2	25.2	1,029.1	32.0	57.0
Travel	536.6	6.2	365.1	6.8	171.4	5.3	68.1
Construction	360.3	4.2	333.4	6.2	26.8	0.8	92.6
Insurance and pension services	20.4	0.2	18.1	0.3	2.2	0.1	89.0
Financial services	112.2	1.3	88.5	1.6	23.7	0.7	78.9
Charges for use of intellectual property	320.7	3.7	296.3	5.5	24.3	0.8	92.4
Telecommunications, computer and information services	1,791.3	20.8	800.0	14.8	991.2	30.8	44.7
Other business services	2,395.2	27.8	1,601.3	29.6	793.9	24.6	66.9
Personal, cultural and recreational services	102.4	1.2	64.8	1.2	37.6	1.2	63.2
Government goods and services, n.e.c.	51.7	0.6	33.4	0.6	18.3	0.6	64.6

Next, the steps taken to record the exports of services at the time they are rendered (see ESA 2010, § 3.177) are described.

Services in the BOP reflect services sold to and purchased from non-residents by Estonian residents, and cover the following items:

- a. *Manufacturing services on physical inputs owned by others* – the manufacture, assembly, labelling, packaging, etc. of goods, where the provider of the service is not the owner of the goods for processing and is paid for the service by the owner of the goods; the assembly of prefabricated construction, and labelling and packaging incidental to transport are excluded;

- b. *Maintenance and repair services* – the maintenance and repair of machines, equipment, means of transport and other goods; this includes any parts or materials supplied by the repairer and included in the charges; parts and materials charged separately are recorded on the goods account; the cleaning of transport equipment, construction maintenance and repairs, and maintenance and repair of computers are excluded;
- c. *Transport* – the carriage of people and objects from one location to another and related support and auxiliary services; it covers passenger, freight and other transport services across the major types of transport (sea, air, rail, road, and other transport); this includes postal and courier services, pipeline transport, and the transmission of electricity;
- *Passenger services* cover international transport of non-residents by resident carriers as exports, and transport of residents by non-resident carriers as imports; also included are internal passenger services for residents provided by non-resident carriers; passenger services are presented across the major types of transport, which are sea, air, rail, road, and other transport;
 - *Freight services* cover the transport of objects other than people; they are presented across the major types of transport, which are sea, air, rail, road, and other transport;
 - *Other transport services* include cargo handling, storage and warehousing, packing and repacking, navigation services, air traffic control, cleaning of transport equipment, salvage operations, agents fees associated with passenger and freight transport, fees for expedition and bookings, etc.; excluded are freight insurance; fuel, goods and provisions procured in ports and airports by non-resident carriers; maintenance and repair of transport equipment; repairs of railways, harbours and airfield facilities; and rental of transport equipment without crew; other transport services are presented across the major types of transport, which are sea, air, rail, road, and other transport;
 - *Pipeline transport* is the international transport of petroleum and related products, water, and gas in pipelines; excluded are distribution services from substations to the consumer and the value of the products transported;
 - *Electricity transmission* means international transmission of electricity by high voltage lines; this includes charges for the transmission of electricity if they can be distinguished from the cost of the production and distribution of electricity; excluded is the cost of the electricity being transmitted and of distribution services to consumers;
 - *Other transport supporting and auxiliary services* cover services that are auxiliary to transport and not directly provided for the movement of goods and people; they cover only transport supporting and auxiliary services which cannot be separated across the major types of transport (sea, air, rail, road, and other transport);
 - *Postal and courier services* cover the pick-up, transport, and delivery of letters, newspapers, periodicals, other printed matter, parcels and packages, including post office counter and mailbox rental services;

- *Travel* includes goods and services for own use or to give away, acquired from an economy by non-residents during visits to that economy, including the use of local transport; international transport, goods purchased for resale and valuable goods like jewellery, works of art and cars are excluded;
 - *Business travel* covers the acquisition of goods and services by business travellers; it also includes the acquisition of goods and services for personal use by seasonal, cross-border and other workers who are not resident in the economy in which they are employed:
 - *Cross-border workers* are those whose permanent residency is in one economy and who are working in another economy, usually in a neighbouring country;
 - *Short-term workers* such as seasonal workers are workers who are working in a foreign country for less than one year;
 - *Personal travel* covers goods and services acquired by travellers going abroad for purposes other than business, such as vacation, recreation or visits, including trips for education and health purposes;
- d. *Construction* – the cost of residents’ construction activities abroad, and the cost of non-residents’ construction activities in Estonia; this includes goods and services purchased in the country of the construction for the purpose of the construction; construction contracts for international trade in services are usually short-term, and for a large-scale construction project contracted by a non-resident enterprise that takes a year or more to be completed, a direct investment enterprise is normally established in that country and the construction project is usually considered to be a resident project;
- e. *Insurance and pension services* – service charges received and paid upon entry into life and non-life insurance contracts (policies), reinsurance, and claim handling costs, insurance evaluations, pension services and standardised guarantee services (export credit and tuition loans); insurance premiums under non-life insurance contracts and insurance benefits paid or contributions and benefits paid under life insurance contracts are excluded;
- f. *Financial services* – financial intermediation services and auxiliary services other than insurance and pension fund services related to commissions and fees for banking and securities brokerage or to custodial services, clearing, depository services, financial consulting and similar; financial services for which a direct fee is charged for service provision are recorded in the sub-entry for directly measured financial services; financial services indirectly measured (FISIM) are also recorded in a separate sub-entry. Interest from loans and deposits includes an income element and a service fee, with the latter recorded under FISIM and the former on the primary income account;
- g. *Charges for the use of intellectual property* cover:
- charges for the use of proprietary rights (patents, trademarks, copyright, and industrial technologies and designs, including trade secrets and franchises); these rights may arise from research and development or marketing;

- charges for licenses to reproduce and distribute originals or prototypes (copyrights on books and manuscripts, computer software, cinematographic works and sound recordings) and related rights (live performances, television, cable or satellite broadcasts);
- h. *Telecommunications, computer and information services* cover:
- *Telecommunications services* – the transmission of sound, images or other information by means of telecommunication; the cost of the information being transmitted is excluded; it also covers mobile telecommunication services and internet backbone services, including access fees; installation services for telephone network equipment and database services are excluded;
 - *Computer services* – hardware- and/or software-related services and data processing services (consultancy, repair and maintenance, disaster recovery services, licenses to use non-customised software, development of customised software, web page hosting and similar); charges for licenses to reproduce or distribute software are excluded;
 - *Information services* are news agency services, database services (database conception, search portals and search engines), and direct, non-bulk subscriptions to periodicals;
- i. *Other business services* cover:
- *Research and development services* – services associated with basic and applied research and the experimental development of new products and processes; in principle, activities in the physical sciences, social sciences, and humanities that represent technological advances are covered within this category; this also includes commercial research related to electronics, pharmaceuticals, and biotechnology, and the purchase or sale of proprietary rights arising from research and development (patents, copyrights arising from research and development, and industrial designs, including trade secrets);
 - *Professional and management consulting services* – legal, accounting, auditing, management consulting, public relations and advertising services, and market research and public opinion polling;
 - *Technical, trade-related and other business services* – architectural, engineering and other technical services, merchanting (commissions and service charges of commodity brokers and dealers), waste treatment and de-pollution, services incidental to agriculture and mining, and operating leases; an operating lease is where assets are rented out (buildings, equipment or means of transport without crew) without any transfer of ownership and risks to the lessee; operating lease contracts usually have a term of less than two years;
- j. *Personal, cultural, and recreational services* – audio-visual services relating to radio, television and cinematography (including the purchase and sale of original manuscripts, films, sound recordings and other works, fees for downloadable products, and TV channel access fees), the organisation of concerts and other events, performance fees and royalties, the intermediation of exhibition and museum

expositions, producer's services, and other sports, cultural and recreational services; this also includes fees for health and education services rendered remotely over the internet or similar or at the site of a service provider abroad; personal, cultural and recreational services (including health and education services) received by people outside their home country are recorded under travel; charges or licenses for the reproduction or distribution of audio-visual products and the sales transactions of exclusive rights are excluded;

- k. *Government goods and services not included elsewhere* – purchase and sale of goods and services by and to enclaves abroad (embassies, international organisations and military bases); spending in the host economy by diplomats, consular staff and military personnel and their dependants based abroad; services supplied by and to governments and not included in other categories of services; transactions by enclaves with residents of the home economies are excluded.

The following describes the steps taken to ensure the correct scope of the exports of services, in particular with respect to:

a) the transactions listed in § 3.173 of ESA 2010;

- 1) Regarding methodological issues, the treatment of transport services in borderline cases (ESA 2010: § 3.173 a–d) is covered in the Balance of Payments. Exports of services include, for example, transportation of exported goods after they have left the frontier of the exporting country when provided by a resident carrier; transportation of imported goods by a resident carrier; transportation of goods by residents on behalf of non-residents which does not involve imports or exports of the goods (e.g. the transport of goods that do not leave the country as exports or the transport of goods outside the domestic territory); passenger transportation on behalf of non-residents by resident carriers.
- 2) For transport services, the main data source is the enterprise survey conducted by Statistics Estonia (ITSS survey). The classification of services contains specific codes for transport services. Data on transportation services are broken down by mode of transport and by passenger, freight and other forms of transportation.
 - For the transportation of goods that do not leave the country as exports or the transport of goods outside the domestic territory, the ITSS survey conducted by Statistics Estonia covers the credit and debit side.
 - Transportation for resident visitors abroad and for foreign visitors in Estonia is covered under the data on travel services and included in expenditures made by tourists.

For travel services, travel expenditures are estimated from the number of visits of tourists as well as same-day visits and their expenditure per capita. The number of non-residents' visits to Estonia and the number of visits abroad by residents are estimated using mobile positioning data provided by OÜ Positium. This includes a geographical breakdown.

Inward and outward travel expenditures per capita, including personal purchases of goods, are estimated from the Household Budget Survey (HBS) and the travel

motivation survey conducted by Statistics Estonia. The HBS covers about 2,500 Estonian households per year. For calculating travel services exports, the travel motivation survey conducted by Statistics Estonia is used: expenditures made in Estonia with a geographical breakdown separately for overnight trips and for same-day visits (the data for 2021 have been revised based on new survey data from 2024). Pre-paid services are estimated using Statistics Estonia's ITSS survey. Credit cards statistics are used for checking and adjusting purposes. For calculating travel services imports, questions from the HBS concerning travelling are used, i.e. duration of the trip, expenditures made in the foreign country and expenditures made in Estonia before the trip, with a geographical breakdown for overnight trips and without a geographical breakdown for same-day visits. Partner country's mirror data are used for checking and adjusting purposes. Internet sales of transportation tickets and other pre-paid services are estimated using the household travel survey by Statistics Estonia.

- Passenger transport on behalf of non-residents by resident carriers outside the reporting country is included in transport services and the value is derived from Statistics Estonia's ITSS survey. This excludes services provided to non-resident passengers by resident carriers within the resident economy (included in travel), cruise fares (travel), and the rentals of time charters without crew.
- Processing and repair activities on behalf of non-residents. In Estonia, these activities are recorded net, i.e. as export of services excluding the value of the goods processed or repaired, if parts and materials are charged separately.
- Installation of equipment abroad when a project is of limited duration by its nature.
- Financial services provided by residents to non-residents include both the explicit and implicit service charge, like FISIM.
- Insurance services provided by residents to non-residents by the amount of the implicit service charge.
- Expenditure by non-resident tourists and business travellers. The expenditure is classified as services.
- Expenditure by non-residents on health services provided by residents; this includes the provision of these services on the domestic territory as well as abroad. For the calculation of non-residents' expenditure on health services, tourists' expenditures on travel services are used. Travel services are divided into business, personal and health services according to the information from the survey on expenditures of inbound tourists conducted by Statistics Estonia. In this survey, visitors indicate the purpose of the trip. Exports of health services were 14.1 million euros and imports 4.2 million euros in 2021.
- Expenditure by non-residents on education services provided by residents; this includes the provision of these services on the domestic territory as well as abroad. For the calculation of education services, the data of the Ministry of Education and Research are used. In addition, the OECD database and partner country's mirror data

are used for checking and adjusting purposes. In 2021, exports of education services were 64.0 million euros and imports 42.7 million euros.

- Services of owner-occupied holiday homes of non-residents. For more information, see Section 8.4.2.2.
- Royalties and license fees, receipts of which are associated with the authorised use of intellectual property rights, such as patents, copyrights, trademarks, industrial processes, franchises, etc., and with the use through licensing agreements of produced originals or prototypes, such as manuscripts, paintings, etc. paid by non-residents to residents.

b) the fee charged for the processing service (see ESA 2010, § 1.51f);

Manufacturing services on physical inputs owned by non-residents cover the value of fees for processing in the reporting country and not the cost of processing goods. This may also include the cost of materials purchased by the processor.

In accordance with ESA 2010 § 1.51f, goods sent abroad for processing and returned after processing without a change in ownership are excluded from exports and imports of goods according to specific regimes shown in customs data and information received via Intrastat surveys. The processing fee is included in the imports and exports of services using Statistics Estonia's ITSS survey, according to BPM6 and ESA 2010 principles. The BOP only shows fees related to manufacturing services on physical inputs owned by others.

For manufacturing services, the main data source is the enterprise survey conducted by Statistics Estonia (ITSS survey). The survey population is updated every quarter, using many data sources (e.g. ITRS, ITGS, Business Register, VAT, VIES, the media etc.). Foreign trade data and NoT codes are used only for data validation and for small enterprises not covered in the enterprise survey. There are several validation procedures introduced to detect and explain outliers and to ensure the internal and/or external consistency of reports. More detailed information about the survey (e.g. sample size, response rate) is provided in Section 10.3.13.

In the ITSS survey, respondents are asked to report both inward and outward processing fees. For enterprises not included in the survey, estimates based on the ITGS are made. Foreign trade data flows, where the 2-digit codes for transaction types are used to record transactions as "goods for processing" and "goods after processing" both in the economy and abroad, are used for estimates. Foreign trade data are available by enterprises as well as by countries and commodities.

The following transaction types are used to determine transactions as "goods for processing" and "goods after processing":

1. Imports for processing in Estonia: transaction codes 41, 42
2. Exports after processing in Estonia: transaction codes 51, 52
3. Exports for processing abroad: transaction code 41
4. Imports after processing abroad: transaction code 51

The types of transactions for the exports and imports of goods are determined by Statistics Estonia according to the customs procedure codes declared in Extrastat and the type of transaction declared in Intrastat.

The customs procedure codes are presented in Table 5.50.

Table 5.50 Customs procedure codes

	Normal customs procedure codes	Inward processing	Outward processing
Exports	1000, 1045, 2200, 3191	1041, 3151	2100
Imports	4000, 4010, 4053, 4054, 4200, 4500, 5900, 6122, 9100, 4071, 4078, 4271, 4278, 4571, 9171	4100, 5100, 5153, 5171, 5178	6121

In 2021, exports of manufacturing services on physical inputs owned by others totalled 323.5 million euros, which is 3.8% of the total exports of services. In 2021, the contribution of manufacturing services on physical inputs owned by others in the imports of services was 94.2 million euros, which is 1.2% of the imports of services.

c) construction services carried out abroad for a period of less than a year;

Construction contracts for international trade in services are usually short-term, and a large-scale construction project contracted by a non-resident enterprise that takes a year or more to complete is usually considered to be a resident project.

Construction services cover the cost of construction activities abroad by resident companies, and in Estonia by non-residents. Construction services, as a rule, include sites or installation to be completed within one year; longer projects are treated as direct investment (DI) abroad or in Estonia. Construction projects lasting longer than one year are treated as notional units abroad. There is no DI among construction services. But if a direct investment enterprise is established for construction purposes, all the activities (incl. construction activity) are recorded under DI.

The main data source is the ITSS survey. For statistical units not included in the ITSS survey, supplementary information on construction services is obtained from the ITRS system.

The exports of construction services totalled 360.3 million euros, which is 4.2% of the total exports of services. The imports of construction services were 76.2 million euros, which is 0.9% of the total imports of services.

d) The exports of insurance and pension services measured (see §§ 3.74 and 3.173 of ESA 2010);

Information on *insurance services* exports is obtained mainly from the ITSS survey. Respondents report premiums and claims. Since 2013, total insurance sector indicators (estimated by Statistics Estonia) have been used to calculate the service component of insurance. For earlier periods, a pre-defined ratio of services to premiums was used.

Exports of insurance services cover:

- Direct insurance
 - Non-life insurance (the share of non-residents is around 4%)
 - Life insurance
- Reinsurance (the share of non-residents is close to zero; only a few local companies have a license to provide cross-border reinsurance)

- Auxiliary insurance services
- Pension and standardised guarantee services

Exports of insurance services were 20.4 million euros in 2021.

Data sources: Information on non-resident premiums and claims and on other non-resident transactions and stocks is collected in the ITSS survey for enterprises. All insurance companies (including branches) submit their data. Information is collected with a full country breakdown. Cross-border provision of pension and standardised guarantee services does not currently exist or is quite insignificant.

Calculation method: Starting from 2013, the component of non-resident services is estimated using the ratios calculated from annual data of the entire insurance sector. The main assumption is that non-residents behave in the same way as the total sector.

Aggregated reports on profits and losses and balance sheets, and previously calculated information from Statistics Estonia on insurance output (=services) and intermediate consumption (~reinsurance) and its components are used. The compilers of the Balance of Payments then use that information to estimate the ratio of services to gross premiums and that of premium supplements to gross premiums. Life and non-life insurance and reinsurance are calculated separately.

- e) The exports of FISIM from resident financial institutions to non-resident financial institutions are not recorded.

Availability of data used: For stocks data, the balance of loans and deposits is taken from the international investment position. For the exports of services, the stocks of assets related to loans and liabilities related to deposits are used only for institutional sectors S.122 and S.125.

Because assets and liabilities between financial intermediaries should be excluded from the stock data, the counterpart data have to be taken into account when the stock from which FISIM is derived is determined.

- For credit institutions (except the central bank, S.122), data are available by counterpart sectors, and therefore stocks between the resident sector S.122 and non-resident credit institutions and other financial intermediaries are not taken into account. It is presumed that savings and loan associations have no transactions with non-residents.
- For other financial intermediaries (S.125), data are compiled using Eesti Pank's enterprise surveys (Form E, see Chapter 10).

For the external reference rate, the data are compiled using the reports from credit institutions on the balance of loans and resources, from which the stocks against non-resident financial intermediaries are taken by currency and by maturity. Each stock is multiplied by the corresponding contractual interest rates from the same reports. The amounts to be paid or received are then divided by the stocks. The result from this compilation represents the average weighted interbank rate, which is used as a reference rate. The domestic subsector S.125 is not included in the calculation of the external reference rate as it has a very negligible impact on the reference rate.

For unadjusted interest income, the income statements of credit institutions are used. In order to derive counterpart sectors, the reports from credit institutions on the balance of loans and resources are used. For sector S.125, data are available from the enterprise surveys (Form E).

Calculation of FISIM: The compilation process uses the stock and interest income figures that are available through the Balance of Payments surveys and statistics on credit institutions. In order to compile FISIM, the average interbank rate is derived to calculate and apply to stock figures. FISIM is the difference between the interest actually charged and the adjusted interest or vice versa, depending on whether the point of view of the lender or the borrower is taken. In 2021, exports of FISIM were 30.6 million euros.

The following describes how it is ensured that the recording of exports of services is consistent with the application of the economic ownership principle for the underlying intellectual property assets.

The recording of exports of services is consistent with the application of the economic ownership principle for the underlying intellectual property assets according to BPM6 methodology.

The data sources used offer the necessary information. In the ITSS survey, services are recorded when there is a change of economic ownership. However, exports of services associated with intellectual property assets are carefully studied on a quarterly basis. All transactions over 1 million euros are checked and compared with other data sources (ITRS); enterprises are contacted for clarification, if needed.

The recommendations from the GNI Expert Group on Software (GNIG/026A) relating to international trade are continuously applied as regards exports. In particular:

- An attempt has been made to identify the software content of the relevant codes of the Combined Nomenclature in foreign trade statistics.

The software content is identified and it is included in foreign trade statistics.

Data on exports include the following items:

- Computer software developed for general or commercial use (Windows 10) or packaged sets containing diskettes or CD-ROMs with data developed for general or commercial use, either with the user manual or without it;
- Audio- and videotapes recorded for general or commercial purposes.

However, exports do not include the following software and information media:

- Diskettes or CD-ROMs with stored computer software and/or data developed to order;
 - Audio- and videotapes containing original recordings;
 - Customised blueprints etc.;
 - Software ordered and delivered via the internet;
 - Licenses which are not directly related to software.
- Exports of software goods are valued at full value rather than the value of the carrier only.

- The data on computer services and royalties and license fees in the BOP are carefully examined to identify any payments related to software. A distinction is made for *computer software* between the goods and services components. Non-customised software provided on physical media with the right to perpetual use is treated as international trade in goods and excluded from computer services. The exports and imports of software goods are valued at full value and recorded under the goods account.

Computer services cover the sale and purchase of software ownership rights and fees for the use of software customised (all types) to order or of non-customised software (downloaded or otherwise electronically delivered, or provided on physical media with a periodic license fee) without the right to reproduce or distribute it. License fees to reproduce and/or distribute listed software are excluded from computer services and are recorded under charges for the use of intellectual property n.i.e. Data on the exports and imports of computer services are derived from the ITSS survey conducted by Statistics Estonia and supplemented mainly with data from the ITRS.

The following describes if and how the information relating to the supply of cross-border services provided under the Mini One-Stop-Shop (MOSS; from 1 July 2021 One-Stop-Shop, OSS) Scheme (and any extensions thereof) is considered for estimating exports of the relevant services.

The MOSS Scheme was considered for estimating exports of telecommunications, broadcasting and information services declared by enterprises via the MOSS scheme. The OSS Scheme is considered for estimating all services declared by enterprises via the OSS scheme. The Tax and Customs Board provides the OSS data to Eesti Pank every quarter. Eesti Pank receives information on services between Estonian enterprises and non-residents. The enterprises who reported data directly to Eesti Pank and Statistics Estonia are excluded from the OSS data to avoid double accounting. Data from other enterprises are used for exports statistics calculation. The OSS data cover European Union countries.

In 2021, the exports of services provided by the OSS/MOSS Scheme were 80.3 million euros.

5.15 Imports of goods

The estimates of the imports of goods are based on the ITGS produced by Statistics Estonia and the BOP compiled by Eesti Pank. In national accounts, the estimates of the imports of goods follow the same concepts as the BOP.

Table 5.51 shows intra-EU and extra-EU imports of goods in the BOP.

Table 5.51 Imports of goods in BOP, 2021

	Value, million euros	% in total
Total	17,782.3	100.0
..Intra-EU	13,933.6	78.4
..Extra-EU	3,848.7	21.6

As seen from Table 5.51, in 2021, the imports of goods in the BOP amounted to 17,782.3 million euros. The goods account deficit stood at 1,362.7 million euros (4.3% of the GDP). Intra-EU imports of goods constitute 78.4% of the total imports of goods, while the corresponding share of extra-EU imports of goods is 21.6%.

The compilation of BOP data on both intra-EU and extra-EU imports of goods is described, including their completeness with respect to the coverage of all imports of goods and any adjustments needed.

The imports of goods in the NA and the BOP cover import transactions made with goods for which a change of ownership occurs between residents and non-residents. The estimates of the imports of goods are based on the special trade system of official ITGS produced by Statistics Estonia, and complemented by adjustments made by Eesti Pank to reflect the BOP concepts. In the national accounts, the estimates of the imports of goods follow the same concepts as in the BOP.

The basic data sources used for calculating the imports of goods in the BOP are described in Section 5.13.

The imports of goods in ITGS are valued at CIF prices that include the value of the goods and the transportation and insurance costs up to the Estonian border. The CIF value corresponds to the basic price as import duties and excise taxes on imports are not included in the value.

Changes and adjustments are made to official foreign trade imports by Eesti Pank when the BOP is compiled, and the most important changes and adjustments include the following:

- a. The imports of goods are recalculated from the CIF value into the FOB value (free on board), meaning that transportation and insurance costs are subtracted from the total cost of the goods. The imports in FOB value are calculated from customs statistics and Intrastat data (where the value of goods is given in CIF). The CIF/FOB ratios are updated regularly (for 2021 calculations, SE used the ratios which were updated in 2019, on the basis of the methodology developed by Statistics Estonia);
- b. The imports of goods for processing in Estonia or after processing abroad are eliminated from foreign trade statistics, using the 2-digit Nature of Transaction code (NoT codes 41, 42, 51 are used);
- c. The purchases of goods not covered in foreign trade statistics, which are those not crossing the country's frontier but which have been recorded in Balance of Payments transactions (such as ships purchased in foreign ports), are added;
- d. Goods purchased for means of transport abroad, such as fuel, provisions and merchandise, are added;
- e. Oil products, oil chemicals and liquid gas in Estonian imports of goods are partly eliminated from BOP and NA statistics, using a 4-digit CN code and a 2-digit Nature of Transaction code;
- f. Paper money and coins not in circulation are added;
- g. The estimates of illegal or undeclared imports of alcohol, tobacco, motor fuel, medicines, sugar and drugs are added using estimates from Statistics Estonia (for a more detailed description, see Section 7.1.3);

- h. Quasi-transit imports are eliminated from BOP and NA statistics. Quasi-transit is an operation whereby goods are imported to Estonia by non-resident enterprises from EU Member States, filling in customs declaration in Estonia, and subsequently dispatched to another country. These enterprises receive a quasi-transit identifier in the ITGS database.

The quarterly enterprise survey conducted by Eesti Pank is the main data source for adjustments in imports (see Section 10.3.12). Data on unissued paper money and coins are obtained from the BOP survey for Eesti Pank (see Section 10.3.12). The survey population is updated every quarter, using many data sources (e.g. ITRS, ITGS, Business Register, foreign trade in services database, the media etc.; see Section 10.4).

For a description of the steps taken to record the imports of goods at the change of economic ownership irrespective of the corresponding physical movement (except for the cases specified in § 3.163 of ESA 2010), see Section 5.13.

Imports of goods between affiliated enterprises and in cases where goods do not cross the border of the country

- a) Deliveries between affiliated enterprises in cases where the establishment receiving the goods assumes responsibility for making the decisions about the levels of supply and prices at which their output is delivered for the market (see ESA 2010, § 3.163);

In the imports of goods, deliveries between affiliated enterprises are based on foreign trade statistics. ITGS record all goods which are added to or subtracted from the stock of material resources of a state by entering the Estonian economic territory. Basically all moveable goods entering Estonia, including electricity and gas, are recorded. In all transactions, the goods have to physically move between countries.

- b) Cases where goods do not cross the country's frontier as listed in § 3.164 of ESA 2010;

The imports of goods occur without the goods crossing the country's frontier in the following examples:

- Goods produced by non-resident units operating in international waters are sold directly to residents in foreign countries. Examples of such goods include fish, crustaceans, molluscs etc., salvages and other goods which are bought or taken on the board of a ship in the open sea. Sea products which were bought in the harbours of another state or from the ships of another state are included in the imports of goods. The data sources used (Extrastat and Intrastat surveys) offer the necessary information.
- Transportation equipment or other movable equipment not tied to a fixed location. The data sources used (Extrastat and Intrastat surveys) offer the necessary information.
- Goods after changing ownership which are lost or destroyed before they have crossed the frontier of the importing country are included in the foreign trade statistics. The data sources used (Extrastat and Intrastat surveys) offer the necessary information.

Exclusions and inclusions

- c) The exclusion of goods sent abroad for processing without change of ownership (see ESA 2010, § 1.51f);

In accordance with ESA 2010 § 1.51f, goods sent to Estonia for processing and returned after processing without a change in ownership are excluded according to specific regimes shown in customs data and information received via Intrastat reports. The processing fee is included in the imports of services using Statistics Estonia's ITSS survey data, according to BPM6 and ESA 2010 principles. For a detailed description of the steps taken to ensure the correct scope of exports and imports of goods with respect to the exclusion of goods sent abroad for processing without change of ownership, see Section 5.13.

- d) The transactions listed in § 3.165 of ESA 2010;

According to the transactions listed in § 3.165 of ESA 2010, all imports of goods are included in imports statistics in Estonia. The data sources used (Extrastat and Intrastat surveys) offer the necessary information. The imports of goods include transactions made between residents and non-residents with the following goods:

- non-monetary gold;

As can be seen in Table 5.52, the value of imports of non-monetary gold in the BOP in 2021 was 164.3 million euros.

Table 5.52 Imports of non-monetary gold, 2021

Imports of non-monetary gold	Value, million euros
Total	164.3

- silver bullion, diamonds and other precious metals and stones;

The values of imports of silver bullion, diamonds and other precious metals and stones in 2021 are given in Table 5.53.

Table 5.53 Imports of silver bullion, diamonds and other precious metals and stones, 2021

Commodity (CN)	Description of the commodity	Value, million euros
Total		164.7
7102	Diamonds, whether or not worked, but not mounted or set (excl. unmounted stones for pick-up styluses, worked stones, suitable for use as parts of meters, measuring instruments or other articles of chapter 90)	0.6
7103	Precious stones and semi-precious stones, whether or not worked or graded, but not strung, mounted or set, ungraded precious stones and semi-precious stones, temporarily strung for convenience of transport (excl. diamonds and imitation precious stones and semi-precious stones)	0.2
7106	Silver, incl. silver plated with gold or platinum, unwrought or in semi-manufactured forms, or in powder form	5.2
7108	Gold, incl. gold plated with platinum, unwrought or not further worked than semi-manufactured or in powder form	158.8

- paper money and coins not in circulation and unissued securities (valued as goods, not at face value);

The imports of goods include paper money and coins not in circulation and unissued securities based on information from Eesti Pank's accounts. In 2021, the imports of such goods totalled 2.1 million euros.

- electricity, gas and water;

In Estonia, there are no exports and imports of water (except bottled water). Estonia only has exports and imports of gas and electricity.

Table 5.54 shows the values of imports of electricity and gas.

Table 5.54 Imports of gas and electricity, 2021

Commodity (CPA)	Description of commodity	Customs procedure	Transaction code	Value, million euros
Total				767.8
062	Natural gas, liquefied or in gaseous state	4000	11	147.3
351	Electricity, transmission and distribution services	1000	11	-
351	Electricity, transmission and distribution services	4000	11	658.8

- livestock driven across frontiers;

This transaction is not relevant for Estonia. For a detailed explanation, see Section 5.13.

- parcel post;

Parcel post is accounted for under the transport code 5 (i.e. postal consignment). Only partial data are available (for intra-EU trade, the indicator was collected on a voluntary basis). The value of imports of parcel post is given in Table 5.55.

Table 5.55 Imports of parcel post, 2021

Transport code	Description	Value, million euros
5	Postal consignment	88.9

- government imports including goods financed by grants and loans;

The value of government imports including goods financed by grants and loans is given in Table 5.56.

Table 5.56 Government imports, 2021

Government imports	Value, million euros
Total	129.5

- goods transferred to or from the ownership of a buffer stock organisation;

There is no separate CN code for strategic stocks. All these goods are recorded under other CN codes (e.g. foods, fuels, etc.).

- goods delivered by a resident enterprise to its non-resident affiliates, except for goods for processing;

These transactions are accounted for only in the exports of goods. For a detailed description, see Section 5.13.

- goods received by a resident enterprise from its non-resident affiliates, except for goods for processing;

Exports and imports of goods between a resident enterprise and its non-resident affiliates are covered by ITGS in Estonia. However, it is not possible to determine how much of a resident's trade is with its non-resident affiliate enterprise because trade cannot be distinguished by trading partners. There is information available about which Estonian residents have affiliates abroad, but it is not possible to separate transactions with affiliates from these residents' total export and import volume.

- smuggled goods or products not reported for taxes like import duties and VAT;

Table 5.57 shows the illegal imports of goods in 2021.

Table 5.57 Imports of goods or products not reported for taxes like import duties and VAT, 2021

Product (CPA)	Description	Value, million euros
Total		30.5
1.C.118	Distilled alcoholic beverages, illegal	0.2
1.C.128	Tobacco products, illegal	1.1
1.C.1920218	Motor fuel, illegal	22.0
1.C.208	Narcotics, illegal	7.1
1.C.218	Medicaments, illegal	0.1

- other unrecorded shipments, such as gifts and those of less than a stated minimum value;

This transaction is not relevant for Estonia. For a detailed explanation, see Section 5.13.

- e) The exclusion of all the cases listed in § 3.166 of ESA 2010.

All the cases listed in § 3.166 of ESA 2010 are excluded in Estonian imports statistics. The data sources used (Extrastat and Intrastat surveys) offer the necessary information.

§ 3.166 of ESA 2010 stipulates that the imports and exports of goods exclude the following goods which nevertheless may cross the national frontier:

- a) goods in transit through a country;
- b) goods shipped to or from a country's own embassies, military bases or other enclaves inside the national frontiers of another country;
- c) transportation equipment and other movable kinds of equipment which leave a country temporarily, without any change of economic ownership, e.g. construction equipment for installation or construction purposes abroad;

d) equipment and other goods which are sent abroad for processing, maintenance, servicing or repair; this applies also to goods processed to order abroad when a substantial physical change in the goods is involved;

e) other goods which leave a country temporarily, being generally returned within a year in their original state and without change of economic ownership.

f) goods on consignment lost or destroyed after crossing a frontier before change of ownership occurs.

Exhaustiveness

The recommendations from the GNP Committee Task Force on Intrastat (CPNB 203) related to exhaustiveness are continuously applied. In particular:

- a) In Estonia, official International Trade in Goods Statistics for the country are comparable with those of other trade partners. Eurostat compares the monthly statistics on the imports of goods between Member States and informs Estonia of the main problems. Based on the information received, the problems are solved immediately. In addition, Statistics Estonia consistently deals with the issues with foreign trade statistics reported by Eurostat.
- b) Data on domestic output and imports are checked against data on domestic use and exports in the supply and use tables.

The supply tables for exports and domestic use are compiled as an integrated part of the supply and use table framework. Thus, domestic output is checked against exports regularly (on an annual basis) upon balancing the supply and use tables. More information about the compilation process of the SUT is provided in Chapter 6.

5.16. Imports of services

Data on the imports of services are derived from the BOP statistics compiled by Eesti Pank. Transactions are recorded on an accrual basis, i.e. at the time the transaction was concluded between parties, regardless of money not having actually been received or paid. Transactions are recorded at market prices. The 6th edition of the IMF's Balance of Payments Manual provides the methodological basis for the compilation of the BOP.

Table 5.58 shows intra-EU and extra-EU imports of services.

Table 5.58 Imports of services, 2021

	Value, million euros	% in total
Total	7,649.6	100.0
..Intra-EU	5,512.9	72.1
..Extra-EU	2,316.6	27.9

Next, the compilation of the Balance of Payments data on both intra-EU and extra-EU imports of services is described, including the completeness of data with respect to the coverage of all imports of services and any adjustments needed.

The data sources and methods used for calculating the imports of services (except the imports of FISIM and of insurance and pension services) are analogous to those used for exports of services. The data sources and methods used are described in Section 5.14.

The imports of services in 2021 amounted to 7,649.6 million euros. The most important types of services in imports were telecommunications, computer and information services, transport, and other business services, which provided 74.8% of the total imports of services. The most important partner countries included Germany, Finland, United Kingdom, Lithuania and Latvia which together accounted for 48.7% of the total imports.

- 1) Data on the imports of services distinguished by categories of the Balance of Payments are presented in Table 5.59 below.

Table 5.59 Imports of services by category of BOP, 2021

	Total		Intra-EU		Extra-EU		Share of intra-EU imports in total value, %
	Value, million euros	%	Value, million euros	%	Value, million euros	%	
Services – total	7,649.6	100.0	5,512.9	100.0	2,136.6	100.0	72.1
Manufacturing services on physical inputs owned by others	94.2	1.1	75.9	1.4	18.3	0.6	80.6
Maintenance and repair services	118.1	1.4	80.7	1.5	37.3	1.2	68.4
Transport	2,139.2	24.8	1,440.9	26.7	698.3	21.7	67.4
Travel	590.0	6.8	407.0	7.5	183.0	5.7	69.0
Construction	76.2	0.9	67.1	1.2	9.1	0.3	88.0
Insurance and pension services	35.2	0.4	29.3	0.5	5.9	0.2	83.3
Financial services	129.5	1.5	84.6	1.6	44.9	1.4	65.3
Charges for use of intellectual property	66.8	0.8	46.6	0.9	20.3	0.6	69.7
Telecommunications, computer and information services	2,341.4	27.2	1,900.2	35.2	441.1	13.7	81.2
Other business services	1,965.7	22.8	1,324.3	24.5	641.4	19.9	67.4
Personal, cultural and recreational services	60.1	0.7	40.7	0.8	19.3	0.6	67.8
Government goods and services, n.e.c.	33.1	0.4	15.5	0.3	17.6	0.5	46.8

The imports of services are recorded similarly to exports. See Chapter 5.14 for more information on how the movements of services are recorded.

- 2) For the description of the steps taken to record imports of services at the time they are rendered (ESA 2010 § 3.177), see Section 5.14.
- 3) Next, the steps taken to ensure the correct scope of the imports of services are described, in particular with respect to:
 - a) Transactions listed in §§ 3.174–3.176 of ESA 2010;
 - The recording of imports and exports of services is similar. There is an equivalent import of services as a mirror image of the list of exports of services in paragraph 3.173 of ESA 2010. For a detailed description, see Section 5.14.

Regarding methodological issues, the treatment of *transport* services in borderline cases (ESA 2010: § 3.175) is also covered in the Balance of Payments. Imports of services include transportation of exported goods up to the frontier of the exporting country when provided by a non-resident carrier to offset the transportation value included in the FOB-value of the exported goods; transportation of imported goods by a non-resident carrier; transportation of goods by non-residents on behalf of residents which does not involve imports or exports of goods (e.g. transport of

goods in transit or transport outside the domestic territory); international or national passenger transportation on behalf of residents by non-resident carriers. The value of freight services in imports is compiled using fixed CIF/FOB ratios by countries and by mode of transportation applied to the value of imports of goods in foreign trade statistics. These coefficients are calculated from customs statistics and Intrastat data (where the value of goods is given in CIF). The ratios used for calculations in 2021 were updated in 2019.

- According to ESA 2010 § 3.176, imports in respect of direct purchases abroad by residents cover all purchases of goods and services made by residents while travelling abroad for business or personal purposes. Two categories are distinguished because they require different treatment:

- (a) all business related expenditures by business travellers are recorded as intermediate consumption;

- All business related expenditures by business travellers are covered in intermediate consumption according to available source data (SBS, ITRS etc.). For example, in the SUT, imports of accommodation services and educational services as part of business expenditure are allocated to intermediate consumption by activity.

- (b) all other expenditures, whether by business travellers or other travellers, are recorded as household final consumption expenditure;

- All other expenditures, whether by business or other travellers, are included in HFCE. The total figures are obtained from the BOP. The residents' expenditures on personal travel are completely included in HFCE. The residents' expenditures on business travel are included partially, covering only expenses not related to business, for example, expenses on food, drinks, etc. The final balancing of these expenditures is made using the SUT framework and corrected if necessary. For a more detailed description, see Section 5.7.2.4.

- b) the fee charged for the processing service (see ESA 2010, § 1.51f); for a detailed description, see Section 5.14.
- c) construction services carried out by non-resident units for a period of less than a year; for a detailed description, see Section 5.14.
- d) imports of insurance and pension services measured (see § 3.74 of ESA 2010);

Imports of insurance and pension services cover:

- Direct insurance
 - Non-life insurance
 - Freight insurance
 - Life insurance
- Reinsurance (almost 100% is taken from non-residents)
- Auxiliary insurance services
- Pension and standardised guarantee services

Estonia imported insurance services for 35.2 million euros in 2021.

Data sources: The main data sources include the ITSS survey of enterprises, the survey of credit institutions, the PSFS and the ITRS. All data are collected with a full country breakdown.

Information on non-resident reinsurance premiums, commissions and claims is also collected via the ITSS survey of enterprises. All insurance companies (including branches) submit their reports to Statistics Estonia. The information is collected with a full country breakdown.

We included the questions on cross-border pensions in the Household Finance and Consumption Survey in 2021. The number of persons who had cross-border pension rights with account balance was insignificant. We plan to continue the investigation of pensions from abroad in future surveys as well and, if the phenomenon becomes more significant, to incorporate the results into the statistics.

Calculation method:

- Direct insurance – the service component is estimated using a simplified approach, and pre-defined ratios are used. Starting from 2013, the services component is estimated as 40% of premiums (following the long-term experience of Germany, Finland and other countries) and premium supplements as 1% of premiums. These shares are regularly reviewed and monitored to ensure reliability. In earlier periods, the estimated services component was lower.
In estimating freight insurance, the CIF/FOB gap and country, depending on the division of the gap between transportation and freight insurance, is used. In 2021, 40% of freight insurance is allocated to services and the rest to premiums as described above.
- Reinsurance – starting from 2013, the component of non-resident services is estimated based on the annual total reinsurance data from Statistics Estonia and the coefficients calculated by Eesti Pank. The reinsurance service component is estimated from reinsurance ratios (services to premiums (gross premiums minus commissions); premium supplements to premiums; and changes in technical reserves to premiums). In 2021, the service component to premiums ratio was around 72%.

- e) Imports of FISIM; the imports of FISIM from non-resident financial institutions to resident financial institutions should not be recorded.

The imports of FISIM from non-resident financial institutions to resident financial institutions are not recorded.

Availability of data used: Data on stocks and unadjusted interest income are available as follows:

- For other financial intermediaries (S.125), data are compiled from enterprise surveys (Form E).
- For other sectors (except HH and NPISH), data are available from Eesti Pank's enterprise surveys (Form E, Form T, survey of credit institutions, Form K), investment funds surveys and general government reports (reports from the Ministry of Finance/State Treasury and the State Guarantee Fund).

- For households and NPISH, data are compiled from estimations that are based on the Households Finance and Consumption Survey (HFCF), the International Transactions Reporting System (ITRS) and interest rates information from countries' webpages. Interest actually charged for deposits is derived by applying short-term deposit rates that are taken from central bank webpages of the UK, the USA, Switzerland, Russia and the ECB. Interest actually charged for loans is derived by applying long-term lending rates that are taken from the same sources. According to estimations, 10% of positions of loan liabilities and interests actually charged are against S.122 and S.125, i.e. taken into account in FISIM compilation.

For the external reference rate, see Section 5.14 above.

Calculation of FISIM: See Section 5.14 above. In 2021, imports of FISIM were 59.2 million euros.

The following describes how it is ensured that the recording of imports of services is consistent with the application of the economic ownership principle for the underlying intellectual property assets.

The recording of imports of services is consistent with the application of the economic ownership principle for the underlying intellectual property assets according to BPM6 methodology.

The data sources used offer the necessary information. In the ITSS enterprise survey, services are recorded when there is a change of economic ownership. However, imports of services associated with intellectual property assets are carefully studied on a quarterly basis. All enterprises reporting transactions over 1 million euros are contacted and asked to clarify.

The recommendations from the GNI Expert Group on Software Measurement (GNIC/026A) relating to international trade are applied as regards exports and imports. For a more detailed description, see Section 5.14).

The following describes if and how the information relating to the supply of cross-border services provided under the Mini One-Stop-Shop (MOSS; from 1 July 2021 One Stop Shop, OSS) Scheme (and any extensions thereof) is considered for estimating imports of the relevant services.

The Mini One-Stop-Shop (MOSS; from 1 July 2021 One-Stop-Shop, OSS) Scheme data are used for estimating imports of services declared by enterprises via the MOSS scheme. The Tax and Customs Board provides the OSS data to Eesti Pank every quarter. Eesti Pank receives information on services between Estonian residents and non-residents. All datasets are considered for import calculation. The OSS data cover European Union countries.

In 2021, the imports of services provided by the OSS/MOSS Scheme were 87.6 million euros.

Chapter 6. Balancing or integration procedure and validating the estimates

6.0. Introduction

- 1) Annual supply and use tables (SUT) are used for calculating final GDP estimates both at current prices and at constant prices of the previous year. The reconciliation between production, expenditure and income based estimates of GDP is performed in the SUT framework at the detailed product level.
- 2) The balancing adjustments for the production approach of GDP are shown in Table 6.1. The total impact of balancing adjustments to GNI was -46.4 million euros or -0.2%.

Table 6.1 Balancing adjustments for the production approach of GDP, 2021
(million euros)

NACE Section	Output	Intermediate consumption	Gross value added
Agriculture, forestry and fishing (A)	2.30	0.00	2.30
Mining and quarrying (B)	0.00	0.00	0.00
Manufacturing (C)	0.04	0.01	0.03
Electricity, gas, steam, air conditioning supply (D)	-28.89	0.00	-28.89
Water supply; sewerage, waste management and remediation activities (E)	0.00	-0.01	0.01
Construction (F)	0.00	0.00	0.00
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	0.22	0.00	0.22
Transportation and storage (H)	0.11	0.00	0.12
Accommodation and food service activities (I)	0.00	0.00	0.00
Information and communication (J)	0.00	0.01	-0.01
Financial and insurance activities (K)	0.00	0.41	-0.41
Real estate activities (L)	0.00	0.00	0.00
Imputed rents of owner-occupied dwellings	0.00	0.00	0.00
Professional, scientific and technical activities (M)	0.00	-0.01	0.01
Administrative and support service activities (N)	0.00	0.00	0.00
Public administration and defence; compulsory social security (O)	0.00	0.00	0.00
Education (P)	0.00	0.00	0.00
Human health and social work activities (Q)	0.00	-0.38	0.38
Arts, entertainment and recreation (R)	-20.16	0.01	-20.17
Other service activities (S)	0.00	0.00	0.00
Activities of households as employers (T)	0.00		0.00
Total	-46.37	0.03	-46.40
Taxes on products	0.00	0.00	0.00
Subsidies on products	0.00	0.00	0.00
GDP/GNI	-46.37	0.03	-46.40
As % of GDP			-0.1
As % of GNI			-0.2

The balancing adjustments for the expenditure side of GDP are shown in Table 6.2. The total impact of balancing adjustments to GNI was -245.37 million euros or -0.8 %.

Table 6.2 Balancing adjustments for the expenditure approach of GDP, 2021
(million euros)

Variable	Value
Total final consumption expenditure	57.37
HFCE	57.37
NPISH final consumption expenditure	0.00
GG final consumption expenditure	0.00
Gross capital formation	-321.85
Gross fixed capital formation	45.80
Changes in inventories	-367.65
Acquisitions less disposals of valuables	0.00
Exports of goods and services	19.11
Imports of goods and services	0.00
GDP/GNI	-245.37
As % of GDP/GNI	-0.8

- 3) The supply and use tables before and after balancing, and the respective balancing adjustments made in the SUT, are provided in Annex 2 to the GNI Inventory.
- 4) The total amount of balancing adjustments for the production approach of GDP and percentage of GNI in 2013–2021 are shown in Table 6.3.

Table 6.3 Balancing adjustments for the production approach of GDP, 2013–2021
(million euros)

	2013	2014	2015	2016	2017	2018	2019	2020	2021
Balancing adjustments	9.1	181.4	15.7	-10.9	-12.8	-77.2	-68.7	-13.3	-46.4
As % of GNI	0.0	0.9	0.1	-0.1	-0.1	-0.3	-0.2	0.0	-0.2

- 5) The largest balancing adjustments in the last few years concern the following product groups:
 - Products of forestry, logging and related services (CPA 02) due to the misclassification of wood in the rough, except fuel wood (product 1.A.022) with wood, sawn and planed (product 1.C.1611).
 - Diesel fuel, kerosene, aviation spirit, other fuel oil (product 1.C.192022) due to underestimation of fuels procured by resident road transport service operators abroad.
 - Employment services (product 1.N.78) due to underestimation of exports of services.
 - Repair services of computers and personal and household goods (product 1.S.95) due to underestimation of output.

6.1. GDP balancing procedure

1) General description of the mechanisms in place for balancing

- a) Statistics Estonia compiles national accounts according to the concepts, definitions, classifications and accounting rules of the European System of Accounts (ESA 2010). Gross domestic product is compiled by three different approaches:
- Production approach;
 - Expenditure approach;
 - Income approach.
- b) GDP is compiled independently by production approach and by expenditure approach. The expenditure approach is an independent approach, as the various expenditure components are estimated. The GDP by income approach is not independent. Some components such as operating surplus and mixed income are derived residually when balancing the supply and use tables.
- c) In GDP compilation, the production approach is considered to be the most reliable method, because more detailed information is available for this approach, and there are more possibilities to verify the estimates against alternative data sources.
- d) The conceptually balanced items handled in balancing are as follows:

Own-account production

Own-account produced fixed assets and goods and services for own final use by households are distinguished as separate products; therefore, consistency between own-account produced output in the supply table and its inclusion as components of HFCE and GFCF in the use table is ensured.

FISIM

Consistency between figures of domestically produced FISIM (product 1.K.649) in the supply table and their inclusion as components of intermediate consumption, HFCE and exports of services in the use table is ensured. A similar approach is applied for imported FISIM in the supply and use table.

Insurance

Consistency between output of non-life insurance services (product 1.K.6511) in the supply table and their inclusion as components of intermediate consumption, HFCE and exports of services in the use table is ensured. All of the total output of life insurance services is allocated to HFCE (besides a small amount of exports of services).

Non-market output of central bank

Non-market output of central bank (product 1.K.6411) is explicitly allocated to the intermediate consumption of credit institutions S.122 (activity F.K.64).

Changes in inventories

Consistency between the components of the changes in inventories in the use tables and the corresponding figures in output (changes in finished goods and work in progress) is provided.

e) Some of the exhaustiveness adjustments are applied holistically across the two or three measures of GDP, i.e. items such as illegal goods and services, income in kind (partly), tips, underreporting of wages and salaries, adjustments for VAT fraud without complicity. The exhaustiveness adjustments (except adjustments for VAT fraud) are carried out before SUT balancing. Adjustments for VAT fraud are made at the final balancing stage.

f) Both the supply and use side aggregates are adjusted in the balancing process, but the demand side is mainly affected due to the balancing (e.g. exports, intermediate consumption, HFCE).

g) The total amounts of output, intermediate consumption, value added and final consumption of the general government sector are not allowed to change. However, the structure of IC by products might be changed without changing the totals of figures. In rare cases, GG sector data are changed in close cooperation with responsible national accountants. Total taxes less subsidies on products are also excluded from the balancing. The total amounts of output, imports and exports of FISIM are usually not adjusted.

h) The final SUT-based GDP estimates are independent of the preliminary and semi-definitive estimates mainly based on quarterly data sources.

2) The use of the supply and use tables in the process of finalising the annual national accounts estimates

a) The supply and use tables are prepared in line with the ESA transmission programme. The most recent version of the SUT for 2021 was prepared and transmitted in December 2024. However, an updated version of the SUT was published and transmitted in September 2025.

b) Annual SUT are used for calculating final GDP estimates both at current prices and at constant prices of the previous year. The supply and use tables are used in the Estonian national accounts since the reference year 2000. The SUT provide a framework for compiling consistent and reliable national accounts data. The final SUT-based GDP estimate becomes available 36 months after the end of the reference year.

c) The SUT are used to determine the final level of GDP.

d) The compilation and balancing are performed at the following level of detail:

In the 2021 SUT, 261 product groups are distinguished. The working level of product detail in the supply and use tables is defined taking into account the availability of the basic data, balancing and analytical purposes, the transmission programme requirements and specific users' needs. Furthermore, some of the products are split in the table according to which type of producers are relevant.

In the classification, the following categories are specified:

- Market goods and services – 184 product groups;
- Non-marketable intra-unit consumed agricultural products such as animal feeding stuffs produced in crop production – 1 product group;
- Net growth of forest – 1 product group;
- Own-account produced tangible and intangible fixed assets – 11 product groups, of which 4 products are originals;
- Other non-market services of general government – 17 product groups (see Table 6.5);
- Specific GG services (market, state duties, etc.) – 20 product groups;
- Other non-market services of NPISH – 6 product groups (see Table 6.6);
- Non-market output of central bank – 1 product group;
- Goods and services for own final use by households – 9 product groups;
- FISIM – 1 product group;
- Illegal goods and services – 6 product groups;
- Income in kind – 3 product groups;
- Unspecified items – 1 product group.

For more information, see description in Section 9.1.2.

In the national accounts, for the production and income approaches, altogether 160 activities are distinguished, including 66 activities in the non-financial sector, 3 activities in the financial sector, 17 activities in the general government sector, 6 activities in NPISH and 68 activities in the households sector. In the 2021 SUT, 103 activities are specified, which are broken down by type of producer: market, other non-market and activities for own final use; and also by institutional sectors to some extent. The market activities of sectors S.11 and S.14 are aggregated together. For more information, see Table 6.7 and Section 9.1.1.

In the SUT, the classification of transactions is specified for productive (P) and distributive (D) transactions and for balancing items (i.e. value added, operating surplus, mixed income). It is consistent with ESA 2010 classification; however, some of the transactions are split into sub-categories (for more information, see Section 9.2).

- e) The main sources used for compiling supply and use tables are the national accounts estimates, the balance of payments and foreign trade statistics of the current year (2021). The main sources and national accounts estimates are described in Chapters 3–5, 7 and 10 of the GNI Inventory.

The breakdown of intermediate consumption by product for sectors other than S.13 is updated every 5 years based on the SBS E-module on cost structure (the last one was conducted for 2018). The next SBS E-module based on the new classifications NACE Rev.2.1 and CPA 2.2 will be available for the reference year 2025. Currently, the extrapolation technique by applying SUT T-1 structure is used. However, changes to initial IC at the product level are made during the balancing of SUT based on foreign trade data for imports of goods, BOP data for imports of services, and other available sources.

- f) The consecutive stages of the process of constructing the SUT are described below.

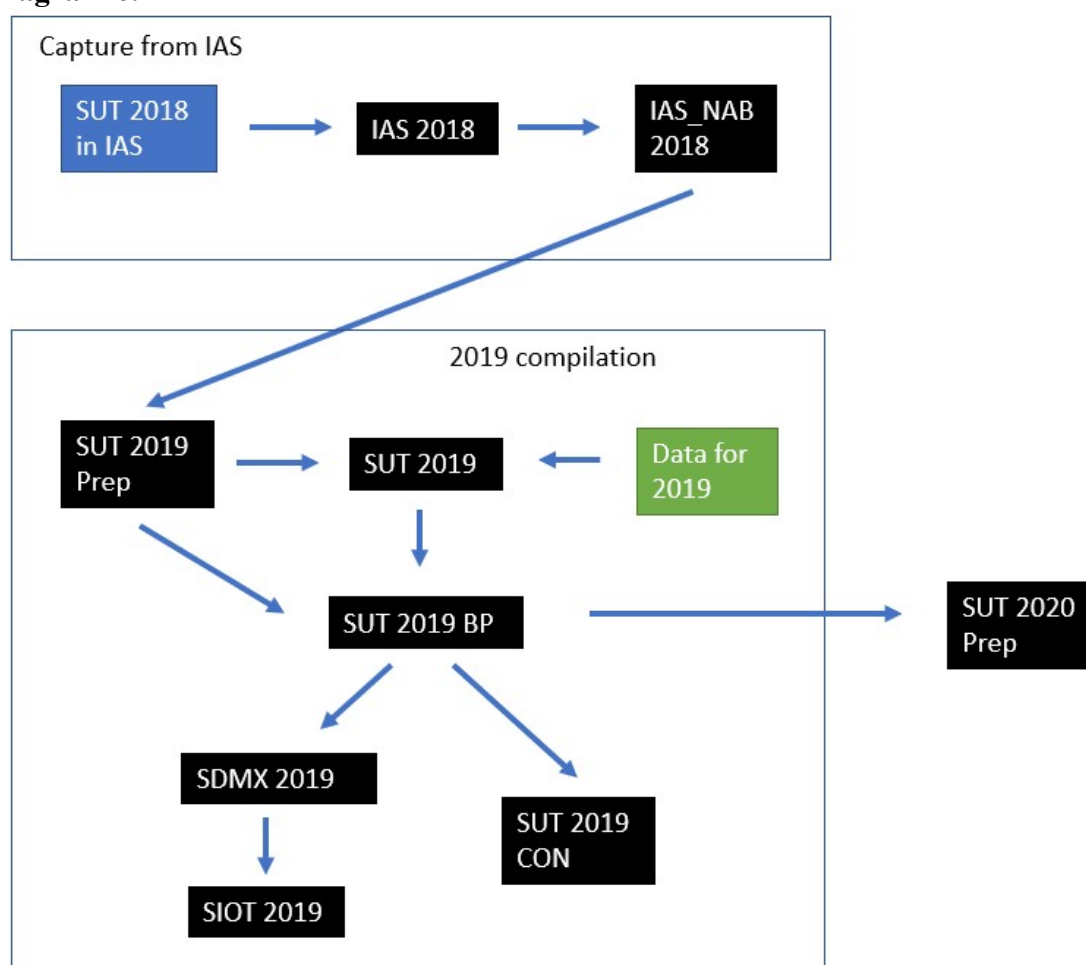
Transition to the new compilation system

For compiling the supply and use tables for 2000–2018, Statistics Estonia used Integrated Accounts System (IAS'96) software developed by the Dutch consulting company NAMES. The old compilation system is described in the previous GNI Inventory 2021.

Since the reference year 2019, the SUT are produced using NA Builder application (NAB)¹⁶. The SUTs for 2019, 2020 and 2021 have been compiled and published so far. Work is ongoing for the 2022 SUT. This section contains the description of the transition from IAS'96 to the new compilation system and gives an overview of the constructing of SUT for 2021.

For the conversion from IAS'96 to NAB, data for the 2018 SUT as needed for the 2019 SUT were prepared in IAS NAB 2018 module and subsequently loaded into SUT 2019 Prep. The data needed for 2019 then went to SUT 2019 – the main compilation module – together with direct data for 2019 (see Diagram 6.1 below).

Diagram 6.1



Consequently, the 2018 SUT framework – i.e. data, structure, product and activity details, trade and transport margins, taxes and VAT ratios – has been used to set up the 2019 SUT framework in NAB.

Once the 2019 SUT in current values were balanced, the use table was converted to basic prices in SUT 2019 BP. Next, the tables were aggregated to the SDMX level in SDMX 2019, which

¹⁶ <https://sites.google.com/site/nabuilder1/the-application>

contained the SDMX table presentations. From here, data went to SIOT 2019, where the required IO tables were derived. Tables in previous year's prices were derived in SUT 2019 CON. Finally, the required inputs for the 2020 compilation (SUT 2020 Prep) were prepared in SUT 2019 BP.

Overview of 2021 SUT compilation system

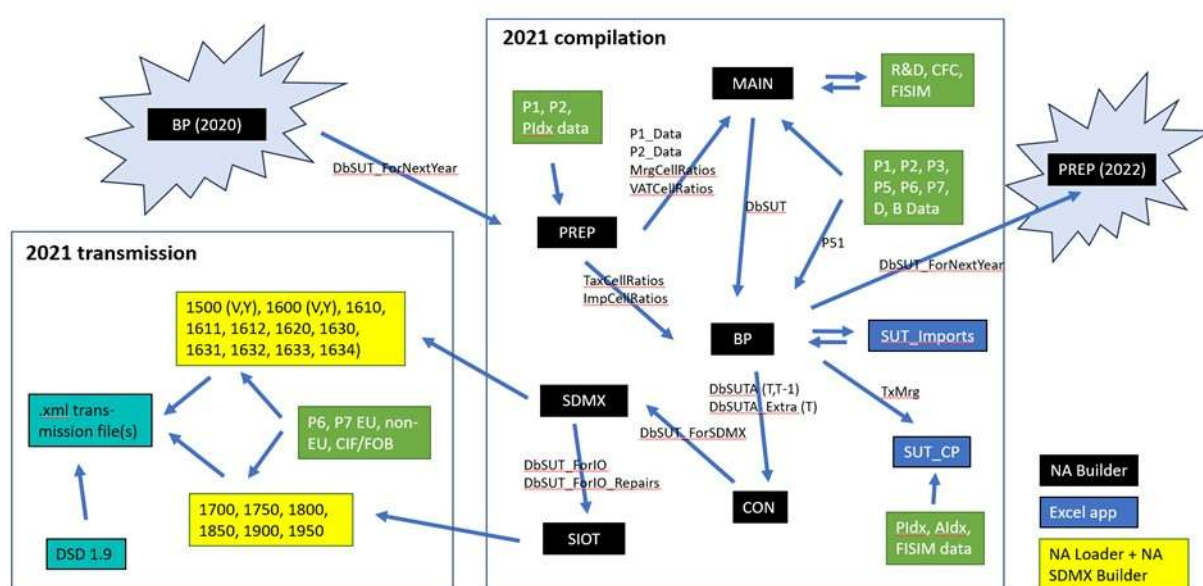
The current SUT compilation system consists of the following elements:

- The six main NA Builder modules: PREP, MAIN, BP, CON, SDMX and SIOT;
- Two dedicated Excel applications: SUT_Imports and SUT_CP;
- The SDMX transmissions tools: NA_Loader and NA_SDMX_Builder.

The MAIN module is for the compilation of the SUT in current values for year T (e.g. 2021). The required data based on structures for the previous year are prepared in the module PREP. Once the tables for year T have been balanced, the conversion of the use table into basic prices takes place in module BP. Negatives for the imports table can be removed with the tool SUT_Imports. The module CON collects data for years T (i.e. 2021) and T-1 (i.e. 2020) and prepares them in the format of the SUT in previous year's prices. The actual table in previous year's prices is prepared in the tool SUT_CP. The transmission tables are prepared in the module SDMX. The input-output tables as well as their transmission tables are prepared in the module SIOT. The actual SDMX transmission files are prepared with the tools NA_Loader and NA_SDMX_Builder.

These modules are connected as shown in Diagram 2, illustrating the situation for the year 2021, but applicable to any sets of years T-1, T and T+1.

Diagram 6.2



This diagram shows the six main NA Builder modules in black, the two special applications in blue and the NA_Loader and NA_SDMX_Builder tools in yellow, and also the main data flows.

PREP Module

The following required data files based on structures for the previous year are prepared in the module PREP:

- P1_Data – distribute output by product;
- P2_Data – distribute intermediate consumption by product;
- MrgCellRatios – calculate (cell) ratios for margins T-1;
- VATCellRatios – calculate (cell) ratios for VAT T-1;
- ImpCellRatios – calculate (cell) ratios for imports T-1;
- TaxCellRatios – calculate (cell) ratios for taxes on products T-1.

For all institutional sectors, the total output by activity is calculated together with the estimates of intermediate consumption and value added components outside the SUT system. The data are prepared by national accountants and are integrated into the SUT framework for balancing.

The explicit P.1 output data with product detail are available for institutional sectors S.12, S.13 and S.15, and also for illegal activities, for household activities for own final use (e.g. imputed rent) and for several defined products of S.11 and S.14. For S.11 and S.14, the P.1 data by activity without product detail have to be coded using the structure from the previous year. The defined products listed in Table 6.4 are excluded from the previous year's structure.

Table 6.4 The list of defined products of S.11 and S.14

Product code	Product name
1.A.0211	Net growth of forest
1.B.0999	Own account mineral exploration
1.C.2899	Equipment, made for own use
1.F.4199	Own-account construction
1.F.4312	Decommissioning costs
1.F.4399	Decommissioning costs, own-account
1.J.591	Cinematographic film, motion picture and video originals
1.J.599	Television and radio broadcasting originals
1.J.6299	Own-account produced software
1.L.682inc	Letting services of residential buildings (income in kind)
1.M.7112	Mineral exploration and evaluation services
1.M.7299	Own account production of scientific research and development
1.N.771inc	Rental services of motor vehicles and other tangible goods (income in kind)
1.R.901	Artistic originals
1.R.902	Literary originals
1.R.93inc	Undifferentiated services (income in kind)

The calculation of “product not defined” (PND) output for each activity was done with the script “P1 prepare”, which distributed the PND output by product using the structure of the output from the 2020 SUT (i.e. T-1). Ratios by column from the supply table T-1 were applied to activity's total PND output for the current year.

The calculation of intermediate consumption for sectors other than S.13 was done with the script “P.2_Impute”. Imputations are based on structures from the previous year of P.2 intermediate consumption. Here, ratios by column from 2020 were applied to activity totals for

2021. This was done separately for the domestic and imported parts. The split was made using the 2020 split. Then, each 2020 part was inflated with price indices to get 2021 values, which were then adjusted to get correct activity totals for 2021. S.13 IC data with product detail were loaded directly to the system. Explicit IC data for a few products (e.g. FISIM 1.K.649, state duties 1.O.842, etc.) were excluded from the calculation and loaded directly to the system.

Both P1_Data and P2_Data files are inputs for the MAIN module.

The two ratio files (MrgCellRatios, VATCellRatios) for 2020 are also inputs for the MAIN module; they are used to calculate margins and VAT for 2021 on the use side. The following ratio files (i.e. ImpCellRatios, TaxCellRatios) are input files for the 2021 BP module.

MAIN Module

The MAIN module is used for the compilation of the SUT in current values. In addition to the inputs listed above, most data for 2021 are added directly to the MAIN sheets “S_Mixed” and “U_Mixed” as described below.

In the supply table “S_Mixed”, the only parts which are not data are the margin columns and the VAT column. Data for P.1 (explicit data and calculated data as described above), imports of goods and services P.7, taxes and subsidies on products D.21–D.31 go directly into the “S_Mixed” sheet.

For imports of goods, the main source of data is foreign trade statistics, and for imports of services – BOP statistics. Correspondence tables are established for the main sources, so that the data for imports of goods as well as for imports of services are converted to the SUT activities and products. Using the identity number of the unit, all units are classified by activity and institutional sector according to the SUT activity classification. Commodities available at the 8-digit level of the Combined Nomenclature (CN) are automatically converted to the main categories of BEC and to CPA products according to the SUT product classification. Goods available at the 2-digit level of CN are initially converted to the SUT product classification; however, this may be changed during the balancing.

Taxes and subsidies on products, excluding VAT, are broken down by product according to the description presented in Sections 3.28 and 3.29.

Margins and VAT by product are calculated from the use side. For margins and VAT, there are calculations which are set up by dedicated scripts outlined below. All formulas multiply the ratios for 2020 with the total obtained by adding the “U_Edits” sheet to the “U_Mixed” sheet, so that the margins and VAT on the use side are automatically adjusted if edits are made.

The following data are added directly to the sheet “U_Mixed”:

The final consumption expenditure of households (HFCE) P.31 is divided into four components: private consumption expenditure P.311, own-account final use P.312, income in kind P.313 and expenditures on illegal products P.31U. The whole amount of HFCE classified by purpose at the 4-digit level of COICOP is taken from the national accounts estimates. For balancing purposes, data are converted to the SUT products using the COICOP-CPA correspondence table.

The final consumption expenditure by general government (GFCE) P.32 is derived from the national accounts estimates. GFCE includes government non-market production P.321 plus social transfers in kind D.632. The total output of S.13 consists of non-market production, market services and fees of general government, and own-account production of intangible fixed assets P.51. Non-market production P.321, calculated as total output less revenue from market sales and own-account production of fixed assets, is broken down by “non-market products” introduced as separate items in the SUT product classification (Table 6.5). Consistency between non-market output of the general government in the supply table and GFCE in the use table is ensured.

Table 6.5 The list of non-market products of the general government sector

Product code	Product name	Transaction
1.H.4919N	Urban and suburban rail transport services (GG)	P.13, P.321
1.H.4939N	Urban and suburban scheduled road transport services (GG)	P.13, P.321
1.H.5019N	Sea, coastal and inland passenger water transport services	P.13, P.321
1.H.5229N	Services incidental to railway transportation (GG)	P.13, P.321
1.J.59_609N	Non-market broadcasting television services (GG)	P.13, P.321
1.J.62_639N	Services of non-market information technology activities	P.13, P.321
1.L.6839N	Public residential buildings management services (GG)	P.13, P.321
1.M.69_709N	Non-market accounting consulting services (GG)	P.13, P.321
1.M.719N	Non-market architectural and engineering services (GG)	P.13, P.321
1.M.729N	Non-market scientific R&D services (GG)	P.13, P.321
1.O.849N	Public administration and defence (GG)	P.13, P.321
1.P.859N	Non-market education services (GG)	P.13, P.321
1.Q.869N	Non-market human health services (GG)	P.13, P.321
1.Q.87_889N	Non-market residential care and social work services (GG)	P.13, P.321
1.R.90_919N	Non-market creative, arts and entertainment services (GG)	P.13, P.321
1.R.939N	Non-market sporting and recreation services (GG)	P.13, P.321
1.S.969N	Non-market funeral and related services (GG)	P.13, P.321

Data on the final consumption expenditure by NPISH (FCE_NPISH) P.33 are derived from the national accounts estimates. FCE_NPISH consists of non-market output P.331 and humanitarian assistance P.332. Non-market production, calculated as total output less revenue from market sales and own-account production of fixed assets, is broken down by “non-market products” introduced as separate items in the SUT product classification (Table 6.6). Consistency between non-market output of NPISH in the supply table and FCE_NPISH in the use table is ensured.

Table 6.6 The list of non-market products of NPISH

Product code	Product name	Transaction
1.L.683S	Own house, garage, holiday house associations management (NPISH)	P.13, P.331
1.P.85S	Education services (NPISH)	P.13, P.331
1.Q.87_88S	Social work services (NPISH)	P.13, P.331
1.R.90_91S	Creative, arts and entertainment services (NPISH)	P.13, P.331
1.R.93S	Sporting services and recreation services (NPISH)	P.13, P.331
1.S.942S	Services furnished by membership organisations (NPISH)	P.13, P.331

GFCF data by fixed assets and by activity for each sector are taken from the national accounts estimates. In the national accounts, GFCF estimates are made for about 150 activities. Firstly, the GFCF matrix is transformed to the matrix in the classification of SUT products and activities. For GFCF (P.51), 94 activities are specified in the SUT. The number of GFCF activities comes close to the corresponding number of activities used for production (output, intermediate consumption, valued added etc). The main difference is for illegal activities and for own use activities of households, where owner-occupiers of dwellings and own account construction are two industries specifying GFCF. For market activities, there is one difference: actual rent of dwellings.

Table 6.7 Comparison of the number of investors and producers in the SUT

Type of investors/producers	Number of CFCF investors	Number of producers
1	2	3
(1) Market activities of S.11 and S.14	66	67
(2) Market activities of S.12	3	3
(3) General government of S.13	17	17
(4) NPISH of S.15	6	6
(5) Own final use activities of households	2	6
(6) Illegal activities	-	4
Total	94	103

In this format, GFCF data are added to the MAIN module for balancing.

Changes in inventories P.52

The values of stocks of work in progress (P.522), finished goods (P.523) (also a part of output P.1) and Holding_Gains_FG_WP (P.527) are taken from the national accounts. For the product distribution, the output breakdown by product for each activity was used. For each activity, the value of stocks of raw materials (P.521) and the value of stocks of goods for resale (P.524) are derived from the national accounts. The product breakdown is calculated based on IC structure assumption (i.e. weights for products) for raw materials. The product breakdown for goods for resale is set up on the 5-digit NACE trading activity level based on the structure with weights for products.

For exports of goods, the main source of data is foreign trade statistics, and for exports of services – BOP statistics. Correspondence tables are established for the main sources, so that the data for exports of goods as well as for exports of services are converted to the SUT activities and products.

The use table is calculated at purchaser's prices, excluding non-deductible VAT.

As already mentioned above, the value added components such as operating surplus and mixed income are derived residually when balancing the supply and use tables. Compensation of employees, other taxes on production and other subsidies on production are derived from the national accounts and are not changed during the balancing process.

SUT BP module

The supply and use system covers the following valuation tables, which are produced regularly on a yearly basis: trade and transport margins, product taxes and subsidies, and the use tables for domestic output and for imports.

Once the SUT in current prices are balanced, the final supply and use tables as well as the margin tables and VAT table are exported to the module BP. The SUT BP module imports these files as well calculates the missing taxes and imports layers using ratios from 2020. The 2020 ratios come from ImpCellRatios and TaxCellRatios prepared in PREP Module.

Based on these data for margins and VAT and imputations for taxes and imports, the use table in basic prices is calculated in sheet "ValBas". The imported use table is in sheet "Imp", the domestic use table is in "ValDom", the margin table is in "Margins", the taxes excluding VAT are in "Taxes". This module prepares the split-up into domestic use and imported use, and it also aggregates to SDMX level ("A").

g) In the supply and use tables, two concepts for product valuation are used – basic and purchasers' prices. Domestic production is valued at basic prices and imports of goods are valued at CIF prices, which correspond to basic prices. Uses are valued at purchasers' prices, excluding deductible VAT, and exports at FOB value, which is equivalent to purchasers' prices. Table 6.8 shows the valuation classification used in the SUT framework. In the system, three different types of trade margins are distinguished: wholesale trade, retail trade and margins on motor vehicles. Transport margins are split into road and railway transport margins. Net taxes on products are divided into customs duties, taxes on imports, taxes on domestic products and subsidies on products.

Table 6.8 Valuation components of the purchasers' value of the products in the use table

		Component	Code
1	=	Purchasers' prices ($1 = \Sigma(2:11) + 12$)	ValVat
2	+	- Non-deductible VAT	VAT
3	+	- Trade margin of motor vehicles	Mrg.45
4	+	- Wholesale trade margins	Mrg.46
5	+	- Retail trade margins	Mrg.47
6	+	- Railway transport margins	Mrg.492
7	+	- Road transport margins	Mrg.494
8	+	- Customs duties	Tax.D2121
9	+	- Taxes on imports	Tax.D2122
10	+	- Taxes on domestic products	Tax.D214
11	(-)	- Subsidies on products (-)	Tax.D319
12	=	Uses at basic prices ($12 = 13 + 14$)	ValBas

		Component	Code
13	=	Imports of goods and services	Imp
14	+	Domestic output	ValDom

h) Integration of the theoretical VAT receipts into the balancing of supply and use tables

VAT ratios specified by categories of use and by products (VATCellRatios) were calculated from the 2020 SUT. To impute the VAT table for 2021 based on the calculated ratios for 2020, VATCellRatios were used in the MAIN module. Note that initial VAT values were calculated in the unbalanced “U_Final” sheet, using 2020 ratios. The final VAT table was derived from balanced “U_Final” after the 2021 numbers were changed during the balancing of SUT.

The total amount of theoretical non-deductible VAT on HFCE, intermediate consumption and GFCF is derived from the balanced SUT. The last step is to reconcile the discrepancy between the theoretical VAT calculated in the SUT framework and the actually paid VAT from government accounts. It should be noted that in 2021 the discrepancy was 0.4 million euros, or 0.0% of VAT paid.

Table 6.9 Comparison of theoretical and actually paid VAT, 2021
(million euros)

SUT	Value
Theoretical VAT calculated in the SUT framework	2, 877.537
The actually paid VAT from government accounts	2, 877.103
Discrepancy	0.434
As % of VAT paid	0.02

This discrepancy is mainly caused by tax arrears, bad debts due to bankruptcy of enterprises and VAT fraud with and without purchasers’ agreement. In 2021, the split between VAT fraud with and without complicity was not made due to the negligible amount of discrepancy. For more information, see previous description in GNI Inventory 2021.

i) Efforts made to investigate and explain inconsistencies between source data

The following approaches are used:

- Quality checks at the individual enterprise level for completeness and plausibility (consistency of data between various statistical surveys (SBS, PRODCOM), comparison with annual reports of enterprises from the Business Register, regular cross-checking procedure to check output against foreign trade and balance of payments data on exports of goods and services and IC against imports of goods and services).
- Analysis of intermediate consumption – output ratios are compared to previous periods at aggregated level by activity and by institutional sector.

In most cases, these inconsistencies are resolved by the introduction of adjustments classified as data validation or balancing adjustments. Any changes to data sources during the SUT balancing lead to recalculation of variables and incorporation of updated figures in the SUT. These changes are monitored and carried forward to the next year.

j) Products and areas for which expert knowledge is used

In the SUT system, about 80 product groups (i.e. around 30% of all products) are conceptually balanced products or products for which special calculations of the supply and use balances are carried out outside the SUT system. For example, such balances are calculated for specific general government services (market, state duties, etc.), FISIM, own-account produced fixed assets (e.g. mineral exploration, R&D, software, etc.), non-life insurance, illegal products and income in kind based on available sources.

The import of services matrix is constructed based on detailed BOP data and balanced outside the SUT system with allocation of products to intermediate consumption by activity, HFCE and GFCF. For imports of goods, special estimations are made using the BEC classification which splits up the imported values into capital, intermediate goods and consumption goods. This information is used for allocation of products during the balancing.

There are several products that are mostly allocated to HFCE, for example, taxi operation services (about 82% of total use in 2021), food and beverage serving services (88%), catering in schools and kindergartens (85%), life insurance services (94%), tour operator services (98%), driving school services (94%), rehabilitation services (98%), gambling and betting services (84%), hairdressing and other beauty treatment services (89%), services of households as employers of domestic personnel (100%).

The allocation of products between transactions (i.e. intermediate consumption, HFCE, GFCF, exports, changes in inventories) is checked for plausibility and reliability during the balancing and adjusted if needed. There are some examples below. About 30 per cent of the total use of medicaments was allocated to HFCE, 30 per cent to the intermediate consumption industries, 20 per cent to GFCE and 10 per cent to exports. About one third of the total use of maintenance and repair services of passenger motor cars was allocated to HFCE, 62 per cent to intermediate consumption in various activities and 9 per cent to exports. About 63 per cent of the total use of photographic services was allocated to HFCE, with the other main use being intermediate consumption.

k) The use of row or column balancing

In the balanced system, the total supply at purchasers' prices, including all valuation components, equals the total uses at purchasers' prices for each product, and the total output is equal to the total input for each industry.

For each product: total supply = total use

For each industry: total output = total input (intermediate consumption plus value added)

In the initial or unbalanced SUT version, total use is not equal to the corresponding supply for most goods and services. For product imbalances, statistical discrepancy (SD1) between supply and demand is calculated ($SD1 = \text{total use} - \text{total supply}$).

Predominance is given to row (i.e. commodity) balancing, because there are statistical discrepancies ($SD1 \neq 0$) between total supply and use for all products in the unbalanced SUT. The output and use items by activity are balanced ($SD2=0$) in the initial SUT. As a result of the manual balancing, total use and total supply are balanced at the product level (i.e. $SD1=0$).

There might be some statistical imbalances by activity (SD2); however, total SD2 imbalances are rather small, covering a few activities. Analysis of intermediate consumption/output ratios by activity is an important part in the balancing process.

l) The level of manual versus automatic balancing

The SUT are balanced manually, automatic balancing procedures (e.g. RAS) are not used. The manual balancing is performed by the SUT group of experts. Balancing tables and preparing all modules usually takes up to 2 or 3 months.

The process of balancing is carried out in two steps: (1) manual and (2) final balancing.

A preliminary analysis of the product imbalances for the total economy is an important step before the real balancing process starts. The aim of this analysis is to identify major problems with the data, for example, to check if all aggregates estimated in the SUT framework are properly recorded on both supply and use sides, and to remove such mistakes.

The aim of manual balancing is to eliminate the imbalances between the supply and use at the product level. Final balancing involves the following steps:

- Removing the differences between the supply and use side trade margins;
- Reconciliation of the theoretical and actually paid VAT (see item h) above).

In the SUT system, trade margins are calculated both from the supply and from the use side. In the supply table, three trade margins are distinguished: trade of motor vehicles (1.G.45), wholesale trade (1.G.462) and retail trade (1.G.47) margins. Trade margin output is calculated by activities and by type of margins based on the SBS and other sources. Trade margin is a main product of trade activities (trade of motor vehicles (NACE 45), wholesale trade (NACE 46) and retail trade (NACE 47) and also a secondary product of almost all non-trade activities. The total value of trade margin output is the sum of the trade margins by trade and non-trade activities, including hidden and illegal activities. Initial trade margins on products are derived from the use side estimates.

On the use side, the trade margin matrices for 2021 were calculated with the “U_Final” table using MrgCellRatios for 2020. As a result of the SUT balancing, the total value of trade margin output on the supply side does not match the value of trade margins on products calculated on the use side. Since estimates of the supply side trade margins are considered to be more reliable, the difference between the supply and use side trade margins is adjusted by changing the margin rates of products applied to private consumption (retail trade margin), re-exports, changes in inventories and GFCF (wholesale trade margin).

m) Comparing the pre-balancing and the post-balancing data

The initial data are stored in the sheets “S_Mixed” and “U_Mixed” of the MAIN module. All edits to any part of the supply and use tables are written in the sheets “S_Edits” and “U_Edits”. This will leave all data cells as they were upon reading. The balanced supply and use tables in the “S_Final”, “U_Final” sheets are obtained by adding the edits to the “S_Mixed”, “U_Mixed” sheets. This “U_Final” sheet is used for the margins and VAT calculations.

Thus, all changes for the supply table made in the “S_Edits” sheet and for the use table in the “U_Edits” sheet are consolidated and stored in the MAIN module. Any revisions to the SUT are documented.

n) Documentation of the balancing adjustments for previous statistical years

The balancing adjustments made for previous statistical years are documented; this ensures consistency of the balancing process from year to year.

3) Factors that can reduce the adequacy of the balancing, integration and validation procedures

No such factors are known.

6.2. Other approaches used to validate GDP

Imputation of unexplained discrepancies to least firmly based items, based on a judgmental process is avoided.

There are several approaches used in national accounts to validate GDP estimates:

- Checks at the individual enterprise level (consistency of data between different statistical surveys, comparison with annual reports from the Business Register, regular cross-checking procedure with the Balance of Payments data on exports and imports of services);
- Checks at aggregated level by activity and by institutional sector (comparison with data on social tax from the Tax and Customs Board, employment data from the Labour Force Survey);
- Analysis of input-output ratios by activities compared to the previous periods;
- Validation of the final SUT estimates against institutional sector and the ROW accounts that guarantees overall consistency between macroeconomic accounts;
- Validation of the final SUT estimates against time series to ensure consistency over time.
- For household consumption, the HBS is supplemented by other sources as described in chapter 5.7.2.
- ROW data use BOP as a direct data source guaranteeing consistency between the domains. A detailed description is provided in Chapter 8.
- GDP employment and population data use demographic data as a direct data source.

Chapter 7. Overview of the allowances for exhaustiveness

7.0. Introduction

This chapter describes current sources and methods that are used for estimating specific components of the non-observed economy in Estonia.

7.0.1. Geographical coverage

In Estonia, the coverage of the economic territory corresponds to Commission Regulation (EC) No 109/2005 and ESA 2010 §§ 2.05–2.07.

The Estonian economic territory includes:

- The geographic territory administered by the Estonian government;
- Bonded warehouses;
- Territorial waters and the national airspace;
- Territorial enclaves in the rest of the world (e.g. embassies) used by the Estonian government with the formal political agreement of the governments of countries in which these units are located.

However, the economic territory excludes any parts of the Estonian geographic territory used by government agencies of other countries (e.g. foreign embassies), by the institutions of the European Union or by other international organisations (under treaties or by agreement).

7.0.2. General approach to exhaustiveness

- 1) In Estonia, explicit exhaustiveness adjustments are made for non-registered underground economy, misreporting of economic indicators, and illegal activities. Additionally, adjustments are made for income in kind and for tips paid in restaurants and hotels and to taxi drivers. As direct primary data on tips are not available, the calculations are based on NA experts' estimates using the available information.

Estimates for wages and salaries in kind are based on two sources: administrative data and the Household Budget Survey (HBS). The Tax and Customs Board data are the starting point in the calculation of income in kind of the corporations and NPISH sectors. The HBS is the additional source used for comparisons and further calculations. The administrative data are adjusted to meet the HBS, considered to be more exhaustive as respondents may underestimate expenses on fringe benefits in completing the tax declarations to avoid double taxation.

Income in kind is often included as intermediate costs by the enterprises that complete the SBS survey of enterprises, while it should be counted as compensation of employees according to ESA 2010 national accounts concepts. Therefore, the expenditures on goods and services provided to the employees for free are reallocated from intermediate consumption to the compensation of employees.

For the general government sector, wages and salaries in kind are estimated within the PSFS system, where the following payments are treated as wages and salaries in kind: food and housing allowances for certain categories of employees, use of business cars, etc.

- 2) The allowances for exhaustiveness are examined and reviewed every year.
- 3) In Estonia, the income approach is not independent. The calculations for exhaustiveness adjustments are done in the production approach. To ensure the consistency of exhaustiveness adjustments between the different approaches to GDP, exhaustiveness estimates are used also in the expenditure approach.
- 4) For more information about the role of the balancing process in the context of exhaustiveness, see the description in Chapter 6.

7.1. Allowances for exhaustiveness in the production approach

7.1.1. Identification of types of non-exhaustiveness (for which adjustments are needed)

An overview of the identified areas of absence, evasion and exemption (as defined in Commission Decision 94/168/EC on exhaustiveness) is provided in Table 7.1 below.

Table 7.1 Summary of non-exhaustiveness adjustments by sector, 2021
(million euros)

Element of non-exhaustiveness	S.11	S.12	S.13	S.14	S.15	Total	As % of GDP
N1	183.5	0	0	66.4	0	249.9	0.8
N2	44.8	0	0	40.0	0	84.8	0.3
N3	0	0	0	107.5	0	107.5	0.3
N4	0	0	0	0	0	0.0	0.0
N5	0	0	0	0	0	0.0	0.0
N6	331.6	0	0	6.8	0	338.4	1.1
N7	590.1	70.8	0	8.7	0.7	670.2	2.1
Total	1,150.1	70.8	0.0	229.4	0.7	1,450.9	4.6
As % of GDP	3.7	0.2	0.0	0.7	0.0	4.6	

In Estonia, the following types of non-exhaustiveness are considered the most important and are currently included in the estimates of GDP: adjustments for non-registered underground economy (non-exhaustiveness type N1), producers not obliged to register (type N3), misreporting (type N6) and other GDP under-coverage (type N7). Illegal activities (type N2) are also estimated and included in GDP.

For 2021, the total non-exhaustiveness adjustments represent 4.6% of GDP, of which 0.8% for non-registered economy, 0.3% for illegal economy, 0.3% for producers not obliged to register, 1.1% for underreporting and 2.1% for other various types of under-coverage.

Explicit exhaustiveness adjustments to GDP estimates by the production approach are related to all institutional sectors. Compared to the GDP in 2021, the largest adjustments are made in the non-financial corporations sector S.11 (3.7% of GDP) and the households sector S.14 (0.7%

of GDP). In other institutional sectors, the adjustments are as follows: 0.2% of GDP in the financial corporations sector S.12 and 0.02% of GDP in the NPISH sector S.15. The general government sector is considered to be exhaustive since all units in this sector are covered in the PSFS.

In Estonia, the following explicit exhaustiveness adjustments are made:

- Non-exhaustiveness identified for absence because of producers that should have registered but did not (underground producers) (N1). The estimation of non-registered underground economy refers to the production of intentionally non-registered productive units in the non-financial corporations and households sectors. This type of non-exhaustiveness adjustment is based on the employment method. The discrepancy between employment data from the supply side based on the Labour Force Survey (LFS) and the data from the demand side is considered as hidden employment and is used for measuring non-observed production.
- Types of non-exhaustiveness identified for absence because of illegal producers that fail to register (N2). In Estonia, the calculations of illegal activities cover prostitution, the production and distribution of drugs, and smuggling of tobacco, alcohol, motor fuel and medicaments .
- Types of non-exhaustiveness identified for exemption because of producers not obliged to register (N3). These are non-market household producers involved in the production of goods for own consumption or for own fixed capital formation, and construction of and repairs to dwellings; or producers who have some market output, but it is below the level at which the producer is expected to register as an entrepreneur. Please see the detailed description in Section 3.1 of the production approach.
- Types of non-exhaustiveness identified for evasion because of misreporting by producers (N6). Misreporting of economic indicators by producers is considered as one of the most important types of hidden activities in Estonia. The main reason for the underreporting of turnover, wages and salaries and for the overreporting of expenses by corporations is the evasion of value added tax, social security contributions and income tax. The principal aim of underreporting of income by unincorporated enterprises is the evasion of income tax payable by sole proprietors. At present, SE makes the following adjustments for misreporting: adjustments to output and value added for underreporting of wages and salaries and profits; adjustments to intermediate consumption and value added for overreporting of expenses; adjustments to output and value added for underreporting of value added tax (VAT fraud without complicity).
- Types of non-exhaustiveness identified because of statistical deficiencies in data (N7). This refers to data that are incorrectly handled, processed or compiled by statisticians. In Estonia, these estimates cover production for own final use by market producers, tips paid in hotels and restaurants and to taxi drivers, and wages and salaries in kind.

7.1.2. Adjustments made for the different types of non-exhaustiveness

The overview tables for output, intermediate consumption and gross value added are provided below (see Tables 7.2, 7.3 and 7.4).

Table 7.2 Output by type of non-exhaustiveness, 2021
(million euros)

Element of non-exhaustiveness	Total: methods	Employment method	Illegal activities	Income in kind	VAT fraud without complicity	Other
N1	433.1	433.1				
N2	91.2		91.2			
N3	236.1					236.1
N4	0.0					
N5	0.0					
N6	336.2	336.2				
N7	609.4			64.0		545.4
Total: elements	1,705.9	769.3	91.2	64.0	0.0	781.5
% in total	100.0	45.1	5.3	3.8	0.0	45.8

As shown in

Table 7.2, the largest adjustments made for non-exhaustiveness in output are made according to the employment method (types N1 and N6). The total adjustment according to the employment method was 769.3 million euros in 2021 or 45.1% of the total of all methods.

Table 7.3 Intermediate consumption by type of non-exhaustiveness, 2021
(million euros)

Element of non-exhaustiveness	Total: methods	Employment method	Illegal activities	Income in kind	VAT fraud without complicity	Other
N1	183.2	183.2				
N2	6.3		6.3			
N3	128.5					128.5
N4	0.0					
N5	0.0					
N6	-2.2	-2.2				
N7	-60.8			-60.8		-0.3
Total: elements	255.0	180.9	6.3	-60.8	0.0	128.3
% in total	100.0	71.0	2.5	-23.8	0.0	50.3

The largest adjustments made for non-exhaustiveness in intermediate consumption are calculated according to the employment method (types N1 and N6). The total adjustment according to the employment method was 180.9 million euros in 2021.

Table 7.4 Gross value added by type of non-exhaustiveness, 2021
(million euros)

Element of non-exhaustiveness	Total: methods	Employment method	Illegal activities	Income in kind	VAT fraud without complicity	Other
N1	249.9	249.9				
N2	84.8		84.8			
N3	107.5					107.5
N4	0.0					
N5	0.0					
N6	338.4	338.4				
N7	670.2			124.8		545.4
Total: elements	1,450.9	588.3	84.8	124.8	0.0	652.9
% in total	100.0	40.5	5.8	8.6	0.0	45.0

As shown in Table 7.4, the largest adjustments made for non-exhaustiveness in value added are made according to the employment method (types N1 and N6) and other methods. The total adjustment according to the employment method was 588.3 million euros in 2021 or 40.5% of the total of all methods.

7.1.3. Exhaustiveness methods

Statistics Estonia compiles national accounts according to the concepts, definitions, classifications and accounting rules of the European System of Accounts (ESA 2010).

Next, detailed descriptions of each adjustment method applied to address the identified elements and types of non-exhaustiveness are provided.

7.1.3.1. Adjustments for non-registered underground economy (N1)

The estimation of non-registered underground economy refers to the production of intentionally non-registered productive units. Usually, these types of non-exhaustiveness adjustments are based on the employment method. The discrepancy between the employment data from the supply side (based on the LFS) and the data from the demand side is considered as hidden employment and is used for measuring non-observed production. These adjustments are related to the hidden activities of producers in the non-financial corporations and households sectors. In the last years, the figures of the demand side from the SBS have been bigger than the LFS figures in Estonia. So, a different approach is used. The number of persons working under a verbal contract is considered as the number of non-registered workers. Starting from 2015, the estimated number of people who stay and work illegally in Estonia is added.

Data sources

The LFS survey is carried out since 1995. The target population of the survey is the working-age residents of Estonia aged 15–74. The employed persons include the following categories: employee, employer, sole proprietor, farmer with paid employees, farmer with no paid employees, freelancer, and unpaid family worker in a family-owned enterprise or a farm. The employed persons are asked about status of employment, economic activity, occupation, the

number of working hours, etc. In addition, the persons are asked to state both their main job and any secondary or third jobs they might have.

In the LFS, employees include persons working under an employment contract, persons under a contract of agreement and persons working under the Public Service Act. From the survey, it is also possible to distinguish the number of employees operating in the hidden economy. Those are persons who work under a verbal contract (i.e. without any formal contract). This type of work usually means moonlighting, which is not officially registered and on which often no taxes are paid. Sole proprietors or individuals who provide services or goods but are not officially registered are also captured by the LFS.

Estimation procedures

The number of persons working under a verbal contract is considered as the number of non-registered workers. Starting from 2015, the estimated number of people who stay and work illegally in Estonia is added. In 2021, by the expert estimation of employers, this figure was approximately 3,000 . The value of output, intermediate consumption and value added are calculated using the SBS data for small enterprises (with 1 to 9 employees) and the data of sole proprietors. The enterprises with 1 to 9 employees are used for calculating non-observed production, assuming that the economic indicators characterising hidden employment are similar to the indicators of small enterprises. The annual average number of enterprises with 1 to 9 employees is also taken from SBS.

The basic data for sole proprietors are received from the Estonian Tax and Customs Board. The initial output, intermediate consumption and value added for sole proprietors are calculated. On the basis of the enterprises with 1 to 9 employees of the non-financial corporations sector and the data of sole proprietors, the average estimates of non-observed output, intermediate consumption and wages and salaries per person by each activity are calculated.

After that, the average numbers per employed person are multiplied by the number of persons working under a verbal contract, and the output, intermediate consumption and wages and salaries of hidden employment are received.

The figure of non-observed intermediate consumption is corrected with the coefficient 0.6 assuming that intermediate consumption is overestimated and some of the general costs are hidden under current costs. It means that the value added is adjusted upwards, to take into account hidden labour by registered units. For this coefficient, the information on enterprises with 1 to 9 employees from SBS statistics is used. This coefficient is used only for the people working under a verbal agreement. As the number of people working under a verbal agreement is quite small and it is decreasing, the LFS does not provide the precise division of people working under a verbal agreement by industries. Thus, the average IC ratio of 60% is used.

Adjustments to output, intermediate consumption and value added by economic activity according to the employment method are presented in Table 7.5.

Table 7.5 Adjustments to output, intermediate consumption and value added by economic activity according to the employment method, 2021 (million euros)

	Total			Corporations sector			Households sector		
NACE Section	Output	IC	Value added	Output	IC	Value added	Output	IC	Value added
Agriculture, forestry and fishing (A)	51.5	24.8	26.7	41.1	18.3	22.8	10.4	6.5	3.9
Mining and quarrying (B)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Manufacturing (C)	118.5	55.4	63.2	104.3	46.9	57.4	14.3	8.5	5.8
Electricity, gas, steam and air conditioning supply (D)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Water supply; sewerage, waste management and remediation activities (E)	0.3	0.2	0.1	0.0	0.0	0.0	0.3	0.2	0.1
Construction (F)	115.3	46.5	68.8	67.6	25.1	42.6	47.7	21.5	26.2
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	36.5	12.2	24.3	29.9	9.3	20.6	6.6	2.9	3.7
Transportation and storage (H)	23.0	10.3	12.8	20.7	8.8	11.8	2.4	1.4	1.0
Accommodation and food service activities (I)	9.7	4.8	4.9	7.9	3.4	4.5	1.7	1.4	0.4
Information and communication (J)	5.4	2.3	3.1	2.9	1.1	1.8	2.6	1.2	1.4
Financial and insurance activities (K)	0.0	0.0	0.0			0.0			0.0
Real estate activities (L)	25.2	6.5	18.7	12.5	3.0	9.4	12.7	3.4	9.3
Professional, scientific and technical activities (M)	11.3	4.2	7.1	5.3	1.9	3.5	5.9	2.3	3.6
Administrative and support service activities (N)	12.7	5.2	7.5	7.4	2.6	4.8	5.3	2.6	2.7
Public administration and defence; compulsory social security (O)	0.0	0.0	0.0			0.0			0.0
Education (P)	2.5	1.2	1.3	0.4	0.1	0.3	2.0	1.1	1.0

	Total			Corporations sector			Households sector		
NACE Section	Output	IC	Value added	Output	IC	Value added	Output	IC	Value added
Human health and social work activities (Q)	3.2	1.1	2.1	1.1	0.3	0.8	2.0	0.8	1.2
Arts, entertainment and recreation (R)	4.2	2.0	2.2	1.3	0.6	0.7	2.9	1.4	1.5
Other service activities (S)	13.7	6.6	7.1	4.1	1.5	2.6	9.7	5.1	4.5
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (T)	0.0	0.0	0.0			0.0	0.0	0.0	0.0
Total	433.1	183.2	249.9	306.5	123.0	183.5	126.6	60.2	66.4

7.1.3.2. Illegal activities (N2)

The calculations of illegal activities cover prostitution, the production and distribution of drugs, and smuggling of tobacco, alcohol, motor fuel and medicaments. The data sources and estimation methods are described hereinafter as follows:

- Prostitution;
- Production and distribution of drugs;
- Smuggling.

7.1.3.2.1. Prostitution

Introduction

Prostitution is not regulated by the state (this means that the selling and buying of sexual services is neither criminalised nor legalised). According to Estonia's Penal Code, only the procuring and organising of prostitution are punishable. Additionally, the Penal Code prohibits renting rooms for prostitution and involving minors in criminal activities or prostitution. At present, there is no government policy or any special state programmes regarding prostitution in Estonia.

Data sources

Several data sources are used for the calculations of estimates of prostitution:

1) Police and Border Guard Board:

The estimates are mainly based on the information received from the special team for combating prostitution in the North Prefecture of the Police Board. On the basis of the data received from the experts of the Police Board, the average prices, number of brothels and apartments, and number of services per day are estimated.

2) Media (newspapers, magazines and internet):

Based on information from the media, the estimations for apartment and house rents and advertisements are made.

3) Data from Statistics Estonia:

SE's data on accommodated tourists by country of residence are used.

Types of prostitution

The following forms of prostitution are represented in Estonia:

a) Prostitution in brothel clubs;

Sex service firms or brothel clubs are considered to be registered under legal activities and operated as saunas, massage salons, catering, dance studios etc. Today, it is common that a guesthouse, massage or sauna parlour owning a license acts as an informal brothel (*Prostitution in Estonia: Social Risks and Economic Pressure, 2003*). In fact, part of the prostitution activity is shown legally under such services, but some of the money circulating illegally in informal brothels is not declared.

b) Prostitution in rented apartments;

Such undertakings offer services on the spot or the possibility to order girls by phone to hotels, private parties etc. (*Katri Eespere (2004). Actions Against Human Trafficking. Estonian Women's Studies and Resource Centre.*). In apartment brothels, prostitutes do not work individually, but the business is well organised by a support network of sex mediators, such as pimps, taxi drivers and brothel owners. Apartment brothels are advertised openly with contact telephone numbers in several local and international newspapers, magazines and on TV, offering "erotic massage" or "private dancing". In addition, taxi drivers distribute their addresses. Prostitution in rented apartments or apartment brothels is not considered legally registered in Estonia.

c) Individually working prostitutes and street prostitution;

As explained above, the selling of sexual services is not a crime in Estonia, but prostitution is not considered a profession either. There are certainly individual prostitutes working from home or a rented room in Estonia on whom there are no data available. The share of individual prostitutes is assumed to be rather minor, and no estimates are made.

d) sex work abroad;

In Estonia, international human trafficking occurs, involving the mediation of prostitutes from Estonia mainly to European countries (*Prostitution and Trafficking Women as Assessed by Tallinn Police, 2002*). At present, sex work abroad is not estimated due to the lack of information on the number of prostitutes working outside Estonia.

Estimation procedures

Eurostat's recommendation is to use a supply side based approach and make calculations in a suitable breakdown for different types of prostitution. In Estonia, the estimates of prostitution are made on the supply side based on the number of brothel clubs and rented apartments. In national accounts, one illegal activity (E.S.96) for prostitution in the non-financial corporations sector is specified. In Estonia, the share of non-resident prostitutes is not considered relevant and is therefore not estimated.

As shown in Table 7.6, the output value of prostitution was estimated at 3.4 million euros and value added at 2.5 million euros in 2021. Prostitution accounted for 0.02% of GDP in 2021.

Table 7.6 Output, IC and value added of prostitution, 2021
(million euros)

Type	Output	Intermediate consumption	Value added	Share in GDP
Brothel clubs	2.6	0.7	1.9	0.01%
Apartment brothels	0.8	0.3	0.5	0.01%
Total	3.4	1.0	2.5	0.02%

Output

The output of prostitution is calculated using the average price of the sex service, the number of services per day per brothel and the number of brothel clubs and apartment brothels (see Table 7.7). The prices and number of services are based on the Police and Boarder Guard Board

information, expert estimates and scientific research data (*Liilia Lõhmus, Kristi Rüütel, Liis Lemsalu, Kaire Vals (2016). Health Survey of Women Involved in Prostitution*).

Table 7.7 Output by type of prostitution, 2021

Type	Number of brothels	Number of services per year per brothel	Average price per service, euros	Total output, million euros
1	2	3	4	$5=2*3*4/1000000$
Brothel clubs	3	4,964	175	2.6
Apartment brothels	20	600	70	0.8
Total	23	5,564		3.4

Based on the information from the police, there were 23 brothels in 2021, including 3 clubs and 20 apartments. The average total number of services per year is based on the average total number of services per day in a brothel (14 in clubs and 2 in apartments) and the average number of brothels and the brothels' working time (365 days). The average price per service was 175 euros in a brothel club and 70 euros in an apartment brothel.

Intermediate consumption

Eurostat recommends calculating intermediate consumption for prostitution services. In Estonia, prostitutes' intermediate consumption is calculated as the costs of advertising, make-up, clothes, telecommunication, apartment rent, equipment (bedclothes, massage appliances, condoms, etc.) and taxi service. The advertising costs are the average price per advertisement in newspapers (based on the information of newspapers); rent is the average rent per year for an apartment and house in Tallinn (based on the biggest real estate website in Estonia); equipment cost is the price of special attire of a prostitute in sex shops (on the basis of newspapers); and transport costs are estimated based on how many people take taxis to brothels (brothels pay taxi drivers for the intermediation service, such as referring a client to them).

The total intermediate consumption of prostitution in 2021 is estimated at 1.0 million euros as the sum of the types of costs of prostitution.

Value added

Value added consists of the wages and salaries of prostitutes and operating surplus. On the basis of the information from newspapers, the wages of prostitutes are estimated at one third of the price of the service. In 2021, wages in the prostitution activity amounted to 1.2 million euros. The operating surplus of prostitution was 1.3 million euros in 2021, which was calculated as the output of prostitution less intermediate consumption less the wages of prostitutes.

Household final consumption expenditure

In 2021, the household final consumption expenditure on prostitution services was 1.0 million euros and the exports of prostitution services were 2.4 million euros. The estimation of services exports is based on a tourism survey. The structure of prostitutes' customers in Estonia is presented in a survey conducted among the police by the Estonian Open Society Institute in 2002 (*Iris Pettai, Ivi Proos, Helve Kase. Prostitution in Estonia: A review of the situation of women involved in prostitution*). Estonia splits the consumption of prostitution services

between HFCE (resident consumption) and exports (non-resident consumption) on the basis of the data of this survey. According to this survey, approximately 70% of the clients of prostitutes are foreigners.

7.1.3.2.2. Production and trafficking of illegal drugs

Introduction

In Estonia, the handling of narcotic drugs is regulated by the state. According to the Penal Code¹⁷, the handling of narcotic drugs, inducing a person to consume a narcotic drug, the cultivation of opium poppy and cannabis, and the violation of the requirements for the handling of narcotic drugs and for related record-keeping and reporting¹⁸ are punishable.

Data sources

Several data sources are used for the calculations:

- 1) Police and Border Guard Board;

From the Police and Border Guard Board, information about the street prices of main drugs and availability of drugs is received.

- 2) Estonian Forensic Science Institute;

From the Estonian Forensic Science Institute, information about confiscated doses by items is received.

- 3) *Country Drug Report – Estonia. 2017. National Institute for Health Development (NIHD), Estonian Monitoring Centre for Drugs and Drug Addiction*¹⁹. The research gives an overview of drug policy, drug use in the general population and specific target groups, prevention, drug-related crime, drug markets etc.

- 4) Media: different kinds of information are available from the mass media, such as the quantity of a dose, the prices per dose and per gram, and how the drugs circulate. The media articles are an additional source supplementing the information from research and the police.

Estimation procedures

Eurostat recommends using the demand side based approach, because the supply side based approach, based on quantities seized, is considered too unstable. The seized quantities can vary sharply and are dependent on many external factors (e.g. customs strategy and priorities, customs equipment and staff numbers, strategy of drug traffickers). In case seizure data are used, it is recommended to use a longer time series and statistical methods to determine average seizure quantities under similar conditions (moving average). However, at least for the benchmark years, it is recommended to confront the results from the demand side with supply side estimates.

In Estonian national accounts, estimates are based on the supply side and are made for production (activity E.C.20 – Production of narcotics) and distribution of narcotics (activity E.G.472 – Distribution of narcotics and illegal trade of medicaments), which are included in

¹⁷ Penal Code, §§ 183–188

¹⁸ Penal Code, § 190

¹⁹ <https://www.emcdda.europa.eu/system/files/publications/4527/TD0416914ENN.pdf>

the households sector. Currently, it is not possible to develop a new demand side based methodology due to the lack of data and also due to the lack of relevant resources. Eurostat also recommends calculating the share of non-residents involved in the trafficking of drugs, but currently there is no data source available for making these assumptions.

According to the statistics of the Estonian Forensic Science Institute, there are mostly 6 types of drugs confiscated (and therefore consumed the most) in Estonia: amphetamine, ecstasy, cannabis, cocaine, fentanyl and GHB. Almost all narcotics are imported to Estonia. Four types of narcotics – amphetamine, ecstasy, GHB and cannabis – are also produced in Estonia.

Statistics Estonia developed its methodology for calculations of illegal activities prior to the recommendations of GNIC.

However, the estimation methodology is quite similar to the recommendations of GNIC. Smoothed seizure data are not used as recommended by GNI/230, and estimates are rather made by smoothing or adjusting seizure rates. For seizures and seizure rates, three-year average smoothing is used. Information on seizure rates is based on the estimates of the police. When performing the calculations, these seizure rates are investigated and corrected periodically.

The output of drugs was estimated at 6.0 million euros and the distributive margin at 39.2 million euros in 2021. The total value of intermediate consumption of narcotics was 5.2 million euros and the total value added was estimated at 39.9 million euros, which accounted for 0.13% of GDP in 2021 (see Table 7.8).

Table 7.8 Production and distribution of drugs, 2021
(million euros)

Activity code	Description	Output	Intermediate consumption	Value added	As % of GDP
E.C.20	Production of narcotics	6.0	0.3	5.6	0.02%
E.G.471	Distribution of narcotics	39.2	4.9	34.3	0.11%
Total		45.1	5.2	39.9	0.13%

The estimation of drugs is made on the supply side, based on the data on seized doses by type of narcotics, the prices of different drugs and the assumption about seizure rates. The quantities and relevant prices are estimated separately as Eurostat recommends. Street prices are available from police experts and (as recommended) are updated every year. Based on other countries' experience, it is supposed that the authorities confiscate approximately 5% of the goods circulating on the illegal market. In 2021, the seizure rates used in calculations were 2–30% depending on the type of drug. These rates are revised yearly.

Supply and use by type of drug is presented in Table 7.9.

Table 7.9 Supply and use by type of drug, 2021
(million euros)

Type of drug	Output	Trade margins	Intermediate consumption	Value added	Import	HFCE
GHB	0.0	0.0	0.0	0.0	0.0	0.0
Amphetamine	1.7	12.0	1.8	11.9	0.4	14.1
Fentanyl	0.0	5.3	0.7	4.6	0.5	5.8
Cocaine	0.0	4.5	0.6	3.9	2.1	6.5
Ecstasy	0.2	4.8	0.6	4.3	1.4	6.4
Cannabis	4.1	12.7	1.6	15.1	2.7	19.5
Heroin	0.0	0.0	0.0	0.0	0.0	0.0
Total	6.0	39.2	5.2	39.9	7.1	52.3

The amount of imported drugs in physical quantities is estimated using information from the police on the percentage of imported drugs in total supply (Table 7.10, column 3). The value of imports by type of drug is calculated using the estimated quantities and the prices of imported drugs. It is supposed that the prices of imported drugs are equal to the prices of produced drugs for dealers available from the police. The total value of imports was estimated at 7.1 million euros in Estonia in 2021.

Table 7.10 Imports by type of drug, 2021

Type of drug	Total supply, grams	Share of imports in supply, %	Imported quantity, grams	Average prices, per gram, euros	Total imports of drugs, million euros
1	2	3	4=2*3	5	6=4*5
GHB	22.7	5.0	1.1	464.8	0.001
Amphetamine	736,212.2	20.0	147,242.4	2.9	0.427
Fentanyl	12,218.7	100.0	12,218.7	39.0	0.477
Cocaine	68,894.5	100.0	68,894.5	30.0	2.067
Ecstasy	213,672.2	90.0	192,304.9	7.5	1.442
Cannabis	1,132,437.3	40.0	452,974.9	6.0	2.718
Heroin	166.3	100.0	166.3	30.0	0.005
Total	2,163,626.0		873,803.0		7.136

The quantities of domestically produced drugs are calculated as total supply less imported quantities of drugs. The value of domestic production was estimated at 6.0 million euros. Intermediate consumption is calculated as the multiplication of the quantity and the cost of production of drugs per gram.

Demand side

Due to lack of data, it is assumed that the re-export of narcotics does not exist and the total amount of produced and imported drugs was consumed by residents and non-residents in the economic territory of Estonia.

Final domestic consumption is estimated using the quantity of consumed drugs and the price of drugs for consumers. The quantities of consumed drugs are calculated as the quantities of produced and imported drugs less the quantities of confiscated drugs. The value of total

expenditure on drugs is estimated at 52.3 million euros in 2021, of which 9.5 million euros is by non-resident consumers.

7.1.3.2.3. Smuggling

In Estonia, estimates for smuggling and illegal trade are made for alcohol, tobacco, motor fuel and medicaments, which are included in GDP. Eurostat makes recommendations only for smuggling of alcohol and tobacco products. A demand side approach is preferred, because a supply side based approach, based on quantities seized, is considered as potentially too unstable. In Estonia, for smuggling of alcohol, tobacco and fuel, a demand side approach is used, although confiscated quantities are also used for comparison in the calculations of imports of alcohol, tobacco and fuel. A supply based approach is in use only for smuggling of medicaments, due to the lack of available data.

In Estonian national accounts, one illegal activity (E.G.471 – Smuggling and illegal trade of alcohol, tobacco and motor fuels) in the non-financial corporations sector is specified. In 2021, the value added of smuggling of tobacco, alcohol, fuel and medicaments was estimated at 36.6 million euros, with a share of 0.12% in GDP (see Table 7.11).

Table 7.11 Smuggling of alcohol, tobacco, motor fuels and medicaments, 2021
(million euros)

Product	Output	Intermediate consumption	Value added	As % of GDP
Tobacco	5.9	-	5.9	0.02
Alcohol	4.9	0.1	4.8	0.02
Motor fuels	31.7	-	31.7	0.10
Medicaments	0.1	-	0.1	0.00
Total	42.6	0.1	36.6	0.12

Smuggling of tobacco

The Estonian Institute of Economic Research (EIER) has performed a survey on a regular basis since 1998 with the purpose of monitoring the situation on the tobacco market in Estonia. The estimates are obtained through an opinion survey of households. This research gives information about consumption patterns, which are used for calculations as Eurostat recommends. For 2020 the sale of illegal cigarettes represented 8–10% of the total local market of tobacco in Estonia.

For 2021, the opinion survey concerning smuggling of cigarettes was conducted by the market research company Norstat in co-operation with the Tax and Customs Board. The results of the opinion surveys are not directly used in national accounts but provide some useful information for calculations (e.g. data on street prices). On the basis of the results of the survey, 21% of adults in Estonia smoke cigarettes and 7% of them bought illegal cigarettes in 2021. The cheaper price of illegal cigarettes is the main reason why people buy them. For example, in 2021, the average price of legal cigarettes exceeded the price of illegal cigarettes 1.8 times.

According to this survey, the residents of Estonia are quite informed about the sales channels of illegal cigarettes (i.e. street vendors, local markets, bars, kiosks or home addresses of the sellers).

Data sources

Several data sources are used for calculations:

- 1) ITGS and average population from Statistics Estonia;

Based on foreign trade statistics, the import price is calculated. The average population aged 18 to 74 is used to determine the number of smokers and then estimate the number of smokers buying illegal cigarettes.

- 2) Estonian Institute of Economic Research;

EIER conducts the opinion survey of households about the consumption and trade of illegal cigarettes in Estonia.

- 3) Market research company Norstat;

- 4) Tax and Customs Board;

From the Tax and Customs Board, information about the amount of confiscated cigarettes is received.

Estimation procedures

The estimates of illegal imports are mostly based on the opinion survey by Norstat . For checking the assumptions, the number of confiscated cigarettes obtained from the Tax and Customs Board is also used. In 2021, 18.1 million cigarettes were confiscated by the Tax and Customs Board. The total amount of illegal cigarettes was estimated at 55 million pieces. According to these calculations, the value of imports of smuggled cigarettes was 1.1 million euros in 2021 (see Table 7.12).

Table 7.12 Calculation of output and imports of illegal tobacco products, 2021

Indicator	Calculation	Value
Confiscated cigarettes, million pcs	1	18.1
Import price (without excise) per packet, euros	2	0.407427
Number of smokers who bought cigarettes during the survey period	3	12,529.1
Average street price per packet of illegal cigarettes, euros	4	2.54
Daily consumption of illegal cigarettes, pieces	5	12
Illegal cigarettes, million packets	$6=3*5*365/1000000/20$	2.74
Trade margin per packet, euros	$7=4-2$	2.13
Output, million euros	$8=6*7$	5.85
Imports, million euros	$9=(6)*2$	1.12

The value of output is calculated using the total amount of smuggled cigarettes and the trade margin per cigarette packet. The trade margin is calculated as average street price minus unit value of a legally imported cigarette packet. The average street prices of illegal cigarettes are available from the opinion survey of households, and unit values are based on the foreign trade data. The output was estimated at 5.9 million euros in 2021.

Data on legal tobacco are based on the ITGS only, as since 1996 there is no domestic production of cigarettes in Estonia. In 2021, 1.4 billion cigarettes were imported to Estonia. Illegal cigarettes represented 1.8% of the total household consumption expenditure for this expenditure group.

Smuggling of alcoholic beverages

According to the estimations of EIER, based on household opinion surveys, the sale of illegal alcoholic beverages represented 2.4% of the total market of strong alcoholic beverages in Estonia, and 1% of alcohol consumers bought illegal alcoholic beverages in 2021

The main reason for buying illegal alcohol is the lower price. According to EIER, the average price of illegal vodka was 7.6 euros per litre in 2021. For comparison, the average price of medium price range legal Estonian vodka was 17.52 euros per litre, and the average price of low price range legal vodka was 12.28 euros per litre (including excise duty and VAT).

Data sources

Several data sources are used for calculations:

- 1) ITGS and average population from Statistics Estonia;
Based on foreign trade statistics, the import price is calculated. The average population aged 18 to 74 is used to determine the number of people consuming legal and illegal alcohol.
- 2) Estonian Institute of Economic Research;
EIER conducts the opinion survey of households on the consumption and trade of illegal alcohol in Estonia. The institute also conducts research on the Estonian alcohol market and alcohol policy.
- 3) Tax and Customs Board;
From the Tax and Customs Board, information about the amount of confiscated alcohol is received.
- 4) Price indices from Statistics Estonia.

Estimation procedures

At present, the estimates of the imports of illegal alcohol are mostly based on the opinion survey and research by EIER. Additionally, the number of confiscated alcoholic beverages obtained from the Tax and Customs Board is used. In 2021, the quantity of pure alcohol confiscated was 9,200 litres.

Table 7.13 Calculation of output, intermediate consumption and imports of illegal alcohol products, 2021

Indicator	Calculation	Value
Confiscated alcohol, thousand litres	1	9.2
Import price (without excise) per litre, euros	2	0.955528
Number of people buying alcohol, n	3	7,860.3
Share of people who bought vodka during the survey period, %	4	0.46
Share of people who bought spirits during the survey period, %	5	0.13
Share of people who bought home-distilled beverages during the survey period, %	6	0.41
Number of people who bought vodka during the survey period, n	$7=3*4$	3,616
Number of people who bought spirits during the survey period, n	$8=3*5$	1,022
Number of people who bought home-distilled beverages during the survey period, n	$9=3*6$	3,223
Average street price per litre of illegal vodka, euros	10	7.6
Average street price per litre of illegal spirits, euros	11	3.0
Average street price per litre of illegal home-distilled beverages, euros	12	10.8
Sale of illegal pure alcohol per year, million litres	13	0.3
...vodka	$14=13*7/(7+8+9)$	0.14
...spirits	$15=13*8/(7+8+9)$	0.04
...home-distilled beverages	$16=13*9/(7+8+9)$	0.12
Output, million euros	$17=14*(10*2.5-2)+15*(11*1.042-2)+16*12*1.77$	4.93
Imports, million euros	$18=(14+15)*2$	0.17
Cost of producing one litre of good-quality home-distilled beverages, euros	19	0.73
Cost of producing one litre of low-quality home-distilled beverages, euros	20	0.26
Intermediate consumption, million euros	$21=\text{average}(19;20)*16*1.77$	0.11

The value of output is calculated using the total amount of illegal alcoholic beverages and the trade margin per one litre of alcoholic product. The trade margin is calculated as the average street prices of illegal alcoholic beverages less the unit values of legally imported denatured ethyl alcohol, by applying the coefficient of 2.5 for vodka, 1.042 for spirits and 1.77 for home-distilled beverages (meaning that, for example, one litre of undenatured ethyl alcohol is used for making 2.5 litres of vodka). The average street prices of illegal alcoholic beverages are available from the opinion survey of households and the unit values from foreign trade statistics.

In 2021, the total amount of illegal alcohol was 0.3 million litres, the output was estimated at 4.9 million euros and imports at 0.2 million euros (see Table 7.13). Illegal alcoholic beverages represented 1.6% of the total household consumption expenditure for this product group.

Intermediate consumption comprises the production cost of home-distilled beverages, and it was estimated at 0.11 million euros in 2021. The cost of transport or storage is not included, since it is considered negligible.

Smuggling of fuel

Motor gasoline and diesel are considered the main types of fuel smuggled to Estonia. The imported quantities and the income from the sale of illegal fuel are not declared by enterprises in business accounts and are also not reported to the tax authority. The main reason for this is the evasion of excise duty.

Data sources

The estimation of smuggled fuel is based on the following data sources:

- 1) Research of the Estonian Road Administration (ERA);
- 2) Data on the share of illegal fuel from the Tax and Customs Board;
- 3) ITGS and retail prices for fuel from Statistics Estonia.

Based on ITGS, the import price is calculated.

Estimation procedures

The research of ERA shows the total amount of fuel consumed in Estonia. Based on this data and the share of illegal fuel, the amount of illegal fuel is calculated. At present, the estimates of illegal imports are based on the aforementioned research. ITGS is also used. Illegal motor gasoline was estimated at 7.1 million litres and diesel at 50.3 million litres in 2021 (see Table 7.14).

Table 7.14 Calculation of output and imports of illegal fuel, 2021

Indicator	Calculation	Value
Import price (without excise) per litre, euros	1	0.382872
Consumption of motor gasoline, million litres	2	282.8
Consumption of diesel, million litres	3	837.7
Share of illegal market for motor gasoline, %	4	2.5
Share of illegal market for diesel, %	5	6.0
Illegal motor gasoline, million litres	$6=2*4/100$	7.1
Illegal diesel, million litres	$7=3*5/100$	50.3
Retail price of motor gasoline per litre, euros	8	1.4
Retail price of diesel per litre, euros	9	1.2
Share of street price, %	10	80
Street price of illegal motor gasoline per litre, euros	$11=8*10$	1.15
Street price of illegal diesel per litre, euros	$12=9*10$	0.98
Output	$13=6*(11-1)+*(12-1))$	31.68
Imports	$14=(6+7)*1$	21.95

The value of output is calculated using the total amount of smuggled fuel and the trade margin per one litre of motor gasoline and diesel. The trade margin is calculated as the average sale price for illegal fuel less the import price. The price for illegal fuel is estimated on the basis of the average sale price for both motor gasoline and diesel. The price for illegal gasoline and

diesel per litre in 2021 was 1.15 and 0.98 euros, respectively. According to foreign trade statistics, the import price for fuel per litre was 0.4 euros (excluding excise duty).

The output was estimated at 31.68 million euros and imports at 21.95 million euros in 2021.

Data on legal fuel are obtained from foreign trade statistics. In 2021, approximately 509 million litres of motor fuel was imported to Estonia. Illegal fuel constituted about 8.2% of the total household consumption expenditure on fuels.

Smuggling of medicaments

Following Estonia's accession to the Schengen Agreement on 21 December 2007, an amendment to the Regulation of the Minister of Social Affairs was introduced. It regulates the import of prohibited medicinal products and also medicinal products requiring a special permit from the State Agency of Medicines from another country that has signed the Schengen Agreement. It also regulates the importation of medicinal products for personal consumption by travellers from non-EU countries.

Estimation procedures

The estimates of illegal medicaments for 2005–2007 were based on the number of confiscated items obtained from the Tax and Customs Board, the prices for different medicinal products and the assumption about seizure rates. The results showed that the impact on GDP is negligible. For instance, the output in 2007 was estimated at 0.4 million euros and the share in GDP at 0.0002%.

Due to the lack of data and the insignificant impact on GDP, the estimates from 2008 onwards have been made using extrapolation with the only data source available – the volumes of confiscated medicaments from the Tax and Customs Board. In 2021, the output was 0.1 million euros and the share in GDP was 0.0003% (see Table 7.15).

Table 7.15 Estimation for illegal medicaments, 2021
(million euros)

	Output	Imports	Value added	Share in GDP
E.C.20	0.10	0.08	0.10	0.00%

7.1.3.3. Non-market household producers involved in production of goods for own consumption (N3)

These are adjustments made to account for the production of goods for own consumption or for own fixed capital formation, and for own-account construction and repairs to dwellings by non-market household producers. The following activities for own final use are defined: production of firewood (activity O.A.02), fishing (O.A.03), own-account construction and major repair of dwellings (O.F.41), and activities of households as employers of domestic personnel (O.T.97_98); see Table 7.16.

Table 7.16 Output of non-market household producers involved in production of goods for own consumption, 2021
(million euros)

Activity code	Activity	Output
O.A.02	Production of firewood	10.7

Activity code	Activity	Output
O.A.03	Fishing	4.2
O.F.41	Own-account construction and major repair of dwelling	204.9
O.T.97_98	Activities of households as employers of domestic personnel	16.2
	Total	236.1

7.1.3.3.1. Production of fuel wood for own final use (activity O.A.02)

In the households sector, estimates are made for the production of fuel wood for own final use (activity O.A.02). Output is estimated using the number of farms, the estimated quantity of fuel wood consumed for own use, and the average prices of timber. The estimates are based on agricultural and forestry statistics and also on price information from the State Forest Management Centre. The assumption underlying the estimation is that most farms own some forest land where farmers obtain fuel wood for their own needs.

The estimations include the following components (see Table 7.17):

- 1) The number of private farms from the survey "Structure of Agricultural Holdings";
- 2) Quantity estimate of timber consumed for own use, based on information obtained directly from farmers;
- 3) Average timber prices (without value added tax) obtained from the State Forest Management Centre.

Table 7.17 Output of activity O.A.02, 2021

Indicator	Codes	Estimation
Number of farms	1	11,369
Timber consumed for own use per farm, m ³	2	20
Total m ³ per year	3=1*2	227,380
Average price per m ³ , euros	4	47.1
Output at current prices, million euros	5=3*4/1000000	10.7

Intermediate consumption is obtained by using a fixed percentage of output (IC/output ratio in forestry). Value added is obtained by subtracting intermediate consumption from output. The calculations are made on the production side and the exact same estimates are taken into account on the expenditure side, in HFCE.

7.1.3.3.2. Production of fishing for own final use (activity O.A.03)

Output estimates (see Table 7.18) for fishing activity for own final use (O.A.03) are based on HBS data, where respondents are asked to provide information on the value of catch at market prices.

Intermediate consumption is calculated by using a fixed percentage of output (IC/output ratio in fishing). Value added is obtained by subtracting intermediate consumption from output.

Table 7.18 Production of fishing for own consumption, 2021
(million euros)

Activity code	Output	Intermediate consumption	Value added

O.A.03	4.2	1.0	3.2

The calculations are made on the production side and the exact same estimates are taken into account on the expenditure side, in HFCE.

7.1.3.3.3. Own-account construction and major repair of dwellings by households (activity O.F.41)

The output value of own-account construction, major repairs and improvements to dwellings by households is calculated by applying a mark-up adjustment to IC (input/output ratio in construction) in order to arrive at the basic price concept. The estimates of intermediate consumption are based on the latest HBS. Data obtained from the survey cover expenditure on construction and major repairs of dwellings made by households and expenditure related to households' economic and production activities. Value added is obtained by subtracting intermediate consumption from output (see Table 7.19).

Table 7.19 Production of own-account construction and major repair of dwellings for own consumption, 2021
(million euros)

Activity code	Output	Intermediate consumption	Value added
O.F.41	204.9	122.9	82.1

The calculations are made on the production side and the same estimates are taken into account on the expenditure side, in GFCF.

7.1.3.3.4. Activities of households as employers of domestic personnel (activity O.T.97_98)

In the case of production associated with paid domestic services, the total output value (16.2 million euros) was calculated on the use side on the basis of the HBS data derived using regression models, where expenditure figures for employed persons in private households were taken as a measure for output. The compilation method for the activities of households as employers of domestic personnel (activity O.T.97_98) is described in Section 3.26.

7.1.3.4. Misreporting by producers (N6)

Misreporting of economic indicators by producers is considered as one of the most important types of hidden activities in Estonia. The main reason for the underreporting of turnover, wages and salaries and overreporting of expenses by corporations is the evasion of value added tax, social security contributions and income tax. The principal aim of underreporting of income by unincorporated enterprises is the evasion of income tax payable by sole proprietors.

In Estonia, estimates are made for envelope salaries and VAT fraud.

7.1.3.4.1. Envelope salaries

Underreporting of wages and salaries and profits

Underreporting of wages in the form of payments of envelope salaries was quite a common

phenomenon in Estonia until 2014. From 1 July 2014, all natural and legal persons providing work are required to register the persons employed by them (including persons working on a voluntary basis) in the employment register of the Tax and Customs Board. The start of employment must be recorded at the latest by the moment when the employee starts the work.

Envelope salaries refer to wages that are actually paid to employees but not reported officially by enterprises in the business accounts and tax statements. For employers, the main aim of underreporting wages in the accounts is the evasion of social security contributions, while the employees who support envelope salaries think that they get a higher income without paying income tax or they want to avoid the repayment of debts.

There are two ways to provide envelope salaries:

- 1) underreporting of output by concealing the enterprise's income from sales;
- 2) overreporting of intermediate consumption.

According to Norstat, 4% of employees received envelope salaries in 2021. On the basis of the data of Statistics Estonia, there were 582,600 employees in Estonia in 2021; consequently, 23,000 employees received envelope salaries. Most of the working population (93%) does not approve of envelope salaries; the share of approvers was 7%.

The opposition to envelope salaries was based on the fact that the employees who receive envelope salaries lack social guarantees, they might also have difficulties with getting bank loans because of their official salaries being small; moreover, according to employees, the paying of envelope salaries is unfair to honest taxpayers. The biggest payers of envelope salaries were catering enterprises (19%), followed by manufacturing and construction enterprises (16%) and trade enterprises (14%). Illegal salaries were mostly received from enterprises with fewer than 20 employees.

Estimation procedures

For the estimation of envelope salaries and profits, the grossed-up data from SBS are used: number of employed persons, number of employees, wages and salaries, and profits and losses. The calculation is carried out mainly on the 2-digit NACE level, but for some activities calculations are also done on the 3- and 4-digit levels. For every enterprise, the average monthly salaries per employed person are calculated.

Next, the average wages and salaries per employee by activity and by county are calculated, including only those enterprises where the number of persons employed is higher than 0. The under-declaration of wages and salaries is assumed if the monthly salaries of employees are below 2/3 of the average compensation of employees of enterprises in the same size group, activity and county. The estimation is based on the assumption that employers cannot find workforce if wages and salaries are below 2/3 of the average level. This conclusion is the result of consultations with the Tax and Customs Board.

Next, two groups are specified:

- Group 1 – the number of employees is higher than 0;
- Group 2 – the number of employees is equal to 0.

On the basis of the data of group 1, the envelope salaries are calculated. On the basis of the data of group 2, the underreporting of profits is calculated.

For the estimation of the underreporting of wages and salaries, first, the average monthly wages and salaries per employee are calculated by activity and by county. Next, the corresponding data of enterprises are compared to the average monthly wages and salaries of the same activity and county. If the results are lower than the corresponding average, the envelope salaries can be estimated.

The average coefficients of underreporting of salaries are evaluated on the basis of the economic activity of the enterprise. After that, the envelope salaries are calculated by applying the coefficients of underreporting to the values of wages and salaries declared by enterprises.

For enterprise group 2, only hidden profit is calculated, for the reason that they do not declare any legal wages and salaries and employees at all. But, as they have turnover, there must be somebody employed who works and receives income.

For the estimation of the underreporting of profits, firstly, the average monthly profits per person employed are calculated. The data on profits are compared between enterprises in the same activity and corrected if the figures are lower than the corresponding industry average.

Adjustments for misreporting of wages and salaries and profits in the non-financial corporations sector by activity are presented in Table 7.20.

Table 7.20 Adjustments for misreporting of wages and salaries and profits in the non-financial corporations sector by activity, 2021
(million euros)

NACE Section	Initial estimates			Type of misreporting		Total adjustment	As % of initial estimates of	
	Output	Intermediate consumption	Value added	Envelope salaries	Profits		Output	Value added
	1	2	3	4	5	6 = 4 + 5	7	8
Agriculture, forestry and fishing (A)	1,925.4	1,448.5	476.9	0.0	0.0	0.0	0.0%	0.0%
Mining and quarrying (B)	325.2	185.1	140.1	0.4	0.2	0.6	0.2%	0.4%
Manufacturing (C)	15,298.5	11,425.8	3,872.7	22.1	7.9	30.0	0.2%	0.8%
Electricity, gas, steam and air conditioning supply (D)	1,840.8	947.0	893.8	0.5	0.7	1.3	0.1%	0.1%
Water supply; sewerage, waste management and remediation activities (E)	936.2	711.5	224.7	0.5	0.2	0.8	0.1%	0.3%
Construction (F)	4,479.2	2,892.6	1,586.7	32.4	12.3	44.7	1.0%	2.8%
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	6,300.3	3,075.7	3,224.5	44.4	24.6	68.9	1.1%	2.1%
Transportation and storage (H)	5,079.9	3,518.5	1,561.4	7.1	4.3	11.3	0.2%	0.7%
Accommodation and food service activities (I)	824.7	513.2	311.4	6.6	2.1	8.7	1.0%	2.8%
Information and communication (J)	3,953.1	2,421.2	1,531.9	26.8	18.1	44.9	1.1%	2.9%
Financial and insurance activities (K)	0.0	0.0	0.0			0.0		
Real estate activities (L)	2,125.8	945.4	1,180.4	9.5	9.5	19.0	0.9%	1.6%
Professional, scientific and technical activities (M)	3,095.3	1,764.0	1,331.4	28.1	23.5	51.5	1.7%	3.9%
Administrative and support service activities (N)	1,648.9	760.6	888.3	21.3	6.1	27.5	1.7%	3.1%
Public administration and defence; compulsory social security (O)	0.0	0.0	0.0			0.0		
Education (P)	133.8	70.2	63.6	1.9	1.0	2.9	2.2%	4.6%
Human health and social work activities (Q)	800.1	308.2	492.0	6.5	0.7	7.2	0.9%	1.5%
Arts, entertainment and recreation (R)	411.2	226.7	184.4	3.3	3.2	6.4	1.6%	3.5%
Other service activities (S)	267.9	156.6	111.3	3.0	3.0	6.0	2.2%	5.4%

NACE Section	Initial estimates			Type of misreporting		Total adjustment	As % of initial estimates of	
	Output	Intermediate consumption	Value added	Envelope salaries	Profits		Output	Value added
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (T)	0.0	0.0	0.0	0.0	0.0	0.0		
Total	49,446.3	31,370.9	18,075.4	214.2	117.4	331.6	0.7%	1.8%

Adjustments for misreporting by sole proprietors

Adjustments for misreporting by sole proprietors are based on administrative data (i.e. tax declarations on the business income of sole proprietors from the Tax and Customs Board). The primary information declared by sole proprietors is regarded as not being of very good quality, as producers tend to intentionally give inadequate information on their revenues and costs, by increasing the costs and hiding their business income. The other reasons for insufficient quality are the following:

- 1) According to the Accounting Act, the business accounts of sole proprietors are not required to undergo auditing.
- 2) Due to limited resources, the Tax and Customs Board mostly concentrates on the auditing and analysis of the tax declarations of large enterprises.

In national accounts, the following adjustments for under-declaration of unincorporated units are made:

- Output and value added are corrected upwards using the adjustment coefficients for misreporting of small enterprises.
- Intermediate consumption is consequently adjusted downwards.

Among unincorporated enterprises, the largest adjustments to value added compared to the initial estimates were made in trade (NACE G), professional, scientific and technical activities (NACE M) and other personal service activities (NACE S); see Table 7.21. No adjustments were made in financial intermediation (NACE K).

Table 7.21 Adjustments for misreporting of wages and salaries in unincorporated enterprises, 2021
(million euros)

NACE Section	Initial estimates			Adjustments for			As % of initial estimates of		
	Output	IC	Value added	Output	IC	Value added	Output	IC	Value added
Agriculture, forestry and fishing (A)	173.7	84.5	89.2	0.2	-0.3	0.5	0.1%	-0.3%	0.6%
Mining and quarrying (B)	0.0	0.0	0.0	0.0	0.0	0.0	0.9%	-1.0%	2.5%
Manufacturing (C)	10.9	6.6	4.3	0.3	-0.1	0.4	2.8%	-1.9%	10.1%
Electricity, gas, steam and air conditioning supply (D)	0.0	0.0	0.0	0.0	0.0	0.0	0.3%	-0.5%	0.9%
Water supply; sewerage, waste management and remediation activities (E)	0.2	0.1	0.1	0.0	0.0	0.0	1.6%	-2.7%	8.4%
Construction (F)	9.8	4.6	5.2	0.3	-0.2	0.5	2.7%	-4.7%	9.2%
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	15.7	6.8	8.9	0.5	-0.1	0.7	3.2%	-2.1%	7.3%
Transportation and storage (H)	47.2	26.8	20.3	0.2	-0.1	0.4	0.5%	-0.4%	1.7%
Accommodation and food service activities (I)	4.2	3.3	0.9	0.1	0.0	0.1	1.7%	-1.0%	12.1%
Information and communication (J)	3.0	1.5	1.4	0.1	0.0	0.1	3.5%	-1.0%	8.3%
Financial and insurance activities (K)	7.3	0.7	6.6			0.0	0.0%	0.0%	0.0%
Real estate activities (L)	2,261.8	384.6	1,877.3	0.1	0.0	0.1	0.0%	0.0%	0.0%
Professional, scientific and technical activities (M)	82.7	16.8	65.9	1.3	-0.8	2.1	1.6%	-4.5%	3.1%
Administrative and support service activities (N)	12.2	6.2	6.0	0.2	0.0	0.2	1.5%	-0.3%	3.4%
Public administration and defence; compulsory social security (O)			0.0			0.0			
Education (P)	4.3	2.2	2.1	0.1	0.0	0.1	2.6%	-0.4%	5.7%
Human health and social work activities (Q)	16.8	6.6	10.2	0.5	0.0	0.5	2.8%	0.0%	4.6%
Arts, entertainment and recreation (R)	4.3	2.1	2.3	0.1	-0.3	0.4	2.7%	-12.8%	16.9%
Other service activities (S)	40.0	21.3	18.7	0.6	-0.2	0.8	1.4%	-1.1%	4.3%
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (T)			0.0	0.0	0.0	0.0			
Total	2,694.1	574.8	2,119.3	4.6	-2.2	6.8	0.2%	-0.4%	0.3%

7.1.3.4.2. VAT fraud Seda SUT-I pealt ei tulnud seekord

Theoretical VAT

SE calculates theoretical VAT in the framework of the supply and use tables on a regular basis starting from the accounting year 2000. Theoretical non-deductible value added tax is calculated by applying the VAT rates to the expenditure of all uses which are subject to VAT and therefore cannot deduct VAT paid on their purchases. Non-deductible VAT is recorded as a valuation component of purchasers' value of the products in the use table. The estimates are made for the following transactions: household final consumption, social transfers in kind, intermediate consumption and gross fixed capital formation of the general government, NPISH and financial corporations sectors, VAT exempted activities of the non-financial corporations sector and household activities.

The total VAT paid during the accounting period does not conform to the theoretical VAT on transactions made during the year. For 2021 the discrepancy between calculated theoretical VAT and VAT actually paid was below 0.4 million euros and had no impact on estimates.

In 2021, the split between VAT fraud with and without complicity was not made due to the negligible amount of discrepancy (see Section 6.1).

Missing trader VAT fraud has been found to be immaterial and National Accounts estimates have not been adjusted accordingly (see Section 2.2.5).

7.1.3.5. Other types of non-exhaustiveness (N7)

These estimations cover production for own final use by market producers, tips paid in hotels and restaurants and to taxi drivers, and wages and salaries in kind. Other types of non-exhaustiveness are presented in Table 7.22.

Table 7.22 Other types of non-exhaustiveness, 2021
(million euros)

Activity	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Agriculture, forestry and fishing (NACE A)						
output	4.3	3.5	0.0	0.0	0.8	0.0
intermediate consumption	-1.2	-1.2	0.0	0.0	0.0	0.0
value added	5.5	4.7	0.0	0.0	0.8	0.0
Mining and quarrying (NACE B)						
output	6.6	6.6	0.0	0.0	0.0	0.0
intermediate consumption	-0.1	-0.1	0.0	0.0	0.0	0.0
value added	6.7	6.7	0.0	0.0	0.0	0.0
Manufacturing (NACE C)						
output	111.6	111.5	0.0	0.0	0.1	0.0
intermediate consumption	-10.9	-10.9	0.0	0.0	0.0	0.0
value added	122.5	122.4	0.0	0.0	0.1	0.0
Electricity, gas, steam and air conditioning supply (NACE D)						
output	28.5	28.5	0.0	0.0	0.0	0.0

Activity	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
intermediate consumption	-0.4	-0.4	0.0	0.0	0.0	0.0
value added	28.9	28.9	0.0	0.0	0.0	0.0
Water supply; sewerage, waste management and remediation activities (NACE E)						
output	3.6	3.6	0.0	0.0	0.0	0.0
intermediate consumption	-0.4	-0.4	0.0	0.0	0.0	0.0
value added	4.1	4.1	0.0	0.0	0.0	0.0
Construction (NACE F)						
output	18.8	18.6	0.0	0.0	0.2	0.0
intermediate consumption	-3.2	-3.2	0.0	0.0	0.0	0.0
value added	22.0	21.8	0.0	0.0	0.2	0.0
Wholesale and retail trade; repair of motor vehicles and motorcycles (NACE G)						
output	39.0	38.8	0.0	0.0	0.2	0.0
intermediate consumption	-12.2	-12.2	0.0	0.0	0.0	0.0
value added	51.2	51.0	0.0	0.0	0.2	0.0
Transportation and storage (NACE H)						
output	41.5	34.1	0.0	0.0	7.4	0.0
intermediate consumption	-3.3	-3.3	0.0	0.0	0.0	0.0
value added	44.9	37.4	0.0	0.0	7.4	0.0
Accommodation and food service activities (NACE I)						
output	21.4	21.3	0.0	0.0	0.1	0.0
intermediate consumption	-0.4	-0.4	0.0	0.0	0.0	0.0
value added	21.7	21.6	0.0	0.0	0.1	0.0
Information and communication (NACE J)						
output	186.0	186.0	0.0	0.0	0.0	0.0
intermediate consumption	-15.0	-15.0	0.0	0.0	0.0	0.0
value added	200.9	200.9	0.0	0.0	0.0	0.0
Financial and insurance activities (NACE K)						
output	66.0	0.0	66.0	0.0	0.0	0.0
intermediate consumption	-4.7	0.0	-4.7	0.0	0.0	0.0
value added	70.8	0.0	70.8	0.0	0.0	0.0
Real estate activities (NACE L)						
output	4.2	4.2	0.0	0.0	0.0	0.0
intermediate consumption	-0.7	-0.7	0.0	0.0	0.0	0.0
value added	4.8	4.8	0.0	0.0	0.0	0.0
Professional, scientific and technical activities (NACE M)						
output	44.5	44.4	0.0	0.0	0.0	0.0
intermediate consumption	-4.2	-4.2	0.0	0.0	0.0	0.0
value added	48.7	48.7	0.0	0.0	0.0	0.0

Activity	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Administrative and support service activities (NACE N)						
output	21.4	21.4	0.0	0.0	0.0	0.0
intermediate consumption	-1.7	-1.7	0.0	0.0	0.0	0.0
value added	23.0	23.0	0.0	0.0	0.0	0.0
Public administration and defence; compulsory social security (NACE O)						
output	0.0	0.0	0.0	0.0	0.0	0.0
intermediate consumption	0.0	0.0	0.0	0.0	0.0	0.0
value added	0.0	0.0	0.0	0.0	0.0	0.0
Education (NACE P)						
output	1.5	1.4	0.0	0.0	0.0	0.1
intermediate consumption	-1.0	-0.9	0.0	0.0	0.0	-0.1
value added	2.5	2.3	0.0	0.0	0.0	0.1
Human health and social work activities (NACE Q)						
output	3.3	3.3	0.0	0.0	0.0	0.1
intermediate consumption	-0.7	-0.7	0.0	0.0	0.0	0.0
value added	4.0	4.0	0.0	0.0	0.0	0.1
Arts, entertainment and recreation (NACE R)						
output	6.6	6.5	0.0	0.0	0.0	0.1
intermediate consumption	-0.4	-0.4	0.0	0.0	0.0	0.0
value added	7.0	6.8	0.0	0.0	0.0	0.1
Other service activities (NACE S)						
output	0.9	0.7	0.0	0.0	0.0	0.2
intermediate consumption	-0.2	-0.1	0.0	0.0	0.0	-0.1
value added	1.2	0.8	0.0	0.0	0.0	0.3
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (NACE T)						
output	0.0	0.0	0.0	0.0	0.0	0.0
intermediate consumption	0.0	0.0	0.0	0.0	0.0	0.0
value added	0.0	0.0	0.0	0.0	0.0	0.0
Total						
output	609.4	534.2	66.0	0.0	8.7	0.4
intermediate consumption	-60.8	-55.8	-4.7	0.0	0.0	-0.2
value added	670.2	590.1	70.8	0.0	8.7	0.7

7.1.3.5.1. Wages and salaries in kind

Since 2000, wages and salaries in kind, or fringe benefits granted to employees, are taxed in Estonia in accordance with the Income Tax Act and Social Tax Act. Employers have to pay both personal income tax (the tax rate was 21 per cent of the taxable income in 2021) and social tax (33 per cent of the taxable amount) on payments in cash and in kind made to natural persons.

In general, the value of a fringe benefit shall be determined on the basis of the market price of the goods or services provided as a fringe benefit. Fringe benefits are defined as any goods, services, remuneration in kind or monetarily appraisable benefits which are given to an employee in connection with an employment relationship.

Legal units have to submit their reports on fringe benefits to the fiscal authority on a monthly and sole proprietors on an annual basis. The data on fringe benefits are available regularly from the Tax and Customs Board since 2000. The information is quite detailed: a breakdown by activity (2-digit level of NACE), by institutional sector and by type of benefit is available.

In national accounts, the estimates for wages and salaries in kind are based on administrative data, the Estonian Social Survey (ESS) and the HBS. The Tax and Customs Board data are the starting point for the calculation of income in kind of the corporations and NPISH sectors. The HBS and ESS are additional sources used for comparisons and further calculations. The administrative data are adjusted to meet the ESS and HBS, considered to be more exhaustive as respondents may underestimate expenses on fringe benefits in completing the tax declarations to avoid double taxation.

For the general government sector, wages and salaries in kind are estimated by using the PSFS system, where the following payments are treated as wages and salaries in kind: food and housing allowances for certain categories of employees, use of business cars, etc.

According to subsection 48 (4) of the Income Tax Act, fringe benefits are defined as any goods, services, remuneration in kind or monetarily appraisable benefits which are given to an employee in connection with an employment relationship²⁰, and include:

- 1) Full or partial covering of housing expenses;
- 2) The use of a vehicle or other property of the employer free of charge or at a preferential price for activities not related to employment or service duties or to the employer's business;
- 3) Payment of insurance premiums, unless such obligation is prescribed by law;
- 4) Compensation for use of a private automobile, in so far as it exceeds the limits provided by the Government of the Republic;
- 5) Loans granted with an interest rate below the market conditions, except if the interest at the moment of the payment thereof is at least twice the interest rate last published by Eesti Pank;
- 6) Transfer free of charge or sale or exchange at a price lower than the market price, of a thing, security, proprietary right or service;
- 7) Purchase of a thing, security, proprietary right or service at a price higher than the market price;
- 8) Waiver of a monetary claim, unless the estimated reasonable costs of collecting the monetary claim exceed the claimed amount;
- 9) Covering of expenses on formal education or in-service training, except for covering of expenses on formal education or in-service training which are directly related to employment and service relationship and functions of a member of management board of a legal person, director of a branch of a foreign company and manager of another permanent establishment of a non-resident;
- 10) Income received from transfer of share options granted by the employer or acquisition of holding that constitutes the underlying assets of the option.

²⁰ <https://www.riigiteataja.ee/en/eli/ee/512122016003/consolide>

Other fringe benefits can be added to this list by the employer; however, personal income tax and/or social tax cannot be levied on some of those.

The administrative data are adjusted to meet the HBS and the ESS data, because the latter are considered more exhaustive as respondents may underestimate expenses on fringe benefits in completing their tax declarations to avoid double taxation.

The HBS provides information about the following types of income in kind:

- 1) Free of charge petrol
- 2) Public transport paid for by the employer
- 2) Free of charge or subsidised company meals
- 3) Coverage of housing expenses
- 4) A company-owned apartment free of charge
- 5) Telephone or postal services paid for by the employer
- 6) Therapeutic services subsidised by the employer
- 7) Education not connected with work, paid for by the employer
- 8) Sports opportunity subsidised by the employer
- 9) Vacation travel subsidised by the employer
- 10) Free of charge or subsidised foodstuffs
- 11) Leasing or loan given with beneficial interest
- 12) Use of the employer's equipment
- 13) Other

The ESS provides information about the same types of income in kind as the HBS.

Other allowances include the following items:

- 1) Covered living costs
- 2) Covered travel costs
- 3) Covered private vehicle costs
- 4) Writing off student loans
- 5) Giving other loans
- 6) Giving assets or providing services with a lower price
- 7) Writing off loans
- 8) Health examination costs
- 9) Courses
- 10) Representational costs
- 11) Meal costs
- 12) Other travelling costs
- 13) Other fringe benefits

For non-financial corporations, financial corporations, unincorporated enterprises of the households sector and NPISH, adjustments to output are made for the private use of business cars and for goods and services produced by the employer and provided to employees at cheaper prices or free of charge. Income in kind is often included as intermediate costs by the enterprises that complete the SBS survey of enterprises, while it should be counted as compensation of employees according to the ESA 2010 national accounts concepts. Therefore, the expenditures on goods and services provided to employees for free are reallocated from intermediate consumption to the compensation of employees.

In 2021, the total amount of income in kind was estimated at 3,446.7 million euros with a share of 1.5% in the GDP. Adjustments for income in kind made in 2021 are given in Table 7.23.

Table 7.23 Adjustments for income in kind, 2021
(million euros)

Type of income in kind	Value
Automotive fuel	3.3
Transport services	2.1
Canteens, free meals and drinks	18.7
Phone calls	11.6
Non-life insurance services	0.6
Housing services allowances	3.2
Letting services of own residential buildings	1.7
Private use of business cars	56.9
Recreation facilities and other services (education, health, sports, travel, etc.)	26.8
Total	124.8

The private use of business cars represents the biggest part of income in kind (45.6%). The second-largest item is the adjustment for recreation facilities and other services (21.4%).

Table 7.24 illustrates the adjustments for income in kind made to output and intermediate consumption by activity and institutional sector in 2021.

Table 7.24 Adjustments for income in kind by activity and by institutional sector, 2021
(million euros)

Activity	Total	Institutional sector				
		S.11	S.12	S.13	S.14	S.15
Agriculture, forestry and fishing (NACE A)						
output	0.8	0.8			0.0	
intermediate consumption	-1.2	-1.2			0.0	
value added	2.1	2.1			0.0	
Mining and quarrying (NACE B)						
output	0.3	0.3				
intermediate consumption	-0.1	-0.1				
value added	0.5	0.5				
Manufacturing (NACE C)						
output	11.3	11.3				
intermediate consumption	-10.9	-10.9				
value added	22.2	22.2				
Electricity, gas, steam and air conditioning supply (NACE D)						
output	0.6	0.6				
intermediate consumption	-0.4	-0.4				
value added	1.0	1.0				

Water supply; sewerage, waste management and remediation activities (NACE E)						
output	0.4	0.4				
intermediate consumption	-0.4	-0.4				
value added	0.9	0.9				
Construction (NACE F)						
output	6.6	6.6				
intermediate consumption	-3.2	-3.2				
value added	9.9	9.9				
Wholesale and retail trade; repair of motor vehicles and motorcycles (NACE G)						
output	16.7	16.7				
intermediate consumption	-12.2	-12.2				
value added	28.9	28.9				
Transportation and storage (NACE H)						
output	4.0	4.0				
intermediate consumption	-3.3	-3.3				
value added	7.3	7.3				
Accommodation and food service activities (NACE I)						
output	0.8	0.8				
intermediate consumption	-0.4	-0.4				
value added	1.1	1.1				
Information and communication (NACE J)						
output	4.2	4.2				
intermediate consumption	-15.0	-15.0				
value added	19.2	19.2				
Financial and insurance activities (NACE K)						
output	1.2		1.2			
intermediate consumption	-4.7		-4.7			
value added	6.0		6.0			
Real estate activities (NACE L)						
output	3.1	3.1				0.0
intermediate consumption	-0.7	-0.7				0.0
value added	3.8	3.8				0.0
Professional, scientific and technical activities (NACE M)						
output	7.4	7.4			0.0	
intermediate consumption	-4.2	-4.2			0.0	
value added	11.7	11.6			0.0	
Administrative and support service activities (NACE N)						
output	2.9	2.9				
intermediate consumption	-1.7	-1.7				
value added	4.5	4.5				

Public administration and defence; compulsory social security (NACE O)						
output	0.0					
intermediate consumption	0.0					
value added	0.0					
Education (NACE P)						
output	0.4	0.4			0.0	0.1
intermediate consumption	-1.0	-0.9			0.0	-0.1
value added	1.4	1.3			0.0	0.1
Human health and social work activities (NACE Q)						
output	2.1	2.0			0.0	0.1
intermediate consumption	-0.7	-0.7			0.0	0.0
value added	2.8	2.7			0.0	0.1
Arts, entertainment and recreation (NACE R)						
output	0.5	0.3				0.1
intermediate consumption	-0.4	-0.4				0.0
value added	0.9	0.7				0.1
Other service activities (NACE S)						
output	0.6	0.4			0.0	0.2
intermediate consumption	-0.2	-0.1			0.0	-0.1
value added	0.8	0.5			0.0	0.3
Activities of households as employers; undifferentiated goods- and services- producing activities of households for own use (NACE T)						
output	0.0					
intermediate consumption	0.0					
value added	0.0					
Total						
output	64.0	62.3	1.2		0.0	0.4
intermediate consumption	-60.8	-55.8	-4.7		0.0	-0.2
value added	124.8	118.2	6.0		0.0	0.7

7.1.3.5.2. Tips

Estimates for tips are made in the case of hotels, restaurants and taxi service activities. As direct primary data on tips are not available, the estimates are made by national accounts experts using the available information. In 2021, the total amount of tips was estimated at 27 million euros or 0.1% of the GDP. The majority of hairdressers, cosmetologists, manicurists etc. work in salons. In salons, it is not common practice to give a tip, and tippers are in the minority. Table 7.25 provides the total amount of tips, output and value added by activity, calculated based on data from the SBS and tax declarations on the business income of sole proprietors before adjustments for tips.

Table 7.25 Tips by activity, 2021
(million euros)

Activity code	Activity	Output from primary sources	Value added from primary sources	Total amount of tips	Tips as % of output	Tips as % of VA
M.I.55	Hotels	229.7	92.5	3.6	1.6	3.9
M.I.56	Restaurants	559.2	216.7	16.0	2.7	7.4
M.H.4932	Taxi operation	50.1	23.2	7.4	14.8	32.0

The basic assumption for the estimation of the amount of tips is that tips are paid to the following employees:

- Waiters/waitresses in restaurants;
- Doormen in restaurants;
- Barmen and waiters/waitresses in bars;
- Porters in hotels;
- Parlour maids in hotels.

The average wages and salaries in hotels and restaurants are significantly lower than in other industries. As the trade sector is a comparable service activity, it is assumed that employees in hotels and restaurants expect to earn as much income as employees in the trade sector, and the difference with trade is lessened by means of tips. The calculation of tips for hotels and restaurants is based on this assumption. The average wages and salaries in trade are calculated by county, and the results are compared to the average wages in hotels and restaurants by county. The difference is treated as tips.

Adjustments for tips in taxi service activities (M.H.4932)

As direct primary data on tips are not available, the calculations are based on expert estimates using all the available information: mainly transportation statistics, such as the number of taxis, the overall mileage of taxis (including mileage for pay), the number of passengers, passenger traffic volume and the CPI for taxi services. In 2021, there was about 6,200 taxis of which 4,500 were related to app-based services. This means there were about 1,700 traditional taxis. The overall mileage of taxis was 32.4 million kilometres, of which 22.6 million kilometres for pay. The passenger traffic volume stood at 42.5 million passenger kilometres.

As most taxi drivers in Estonia are registered as sole proprietors, an adjustment is made for the household activity M.H.4932 Taxi operation.

In 2021, the total amount of tips in taxi service activities was estimated at 7.4 million euros. In the calculations, the assumption is made that the average monthly amount of tips is approximately 3/4 of the average net salaries, based on consultations with colleagues in transport statistics.

7.1.3.5.3. Production for own final use by market producers

Output for own final use is valued at the costs of production plus a mark-up for net operating surplus or mixed income. The groups of own-account products by market producers are as follows: equipment and machinery made for own capital formation (product 1.C.2899), own-account construction (1.F.4199), film, TV and radio broadcasting originals (1.J.591 and 1.J.599), own-account produced software (1.J.6299) and own-account production of R&D (1.M.7299). For more detailed information, see Chapter 3.

In Estonia, various GNP and GNI Committee Task Force recommendations are followed, in particular:

- Recommendations from the GNP Committee Task Force on Distribution. In the expenditure approach, HFCE estimates for HORECA are obtained from the production side. For HFCE, data from the HBS are also available. Estimates from both sources are compared constantly and corrections are made, if needed. For more information, see the description in Sections 5.7.3.11 and 5.7.2.3.
- Recommendations from the GNP Committee Task Force on Construction. Estimates of construction output are compiled within a regular and comprehensive supply and use framework. On the supply side, estimates of construction output and value added are based on the production approach, with adjustments made for exhaustiveness. On the use side, expenditure data on new building and structural engineering works are derived from primary statistical and administrative sources. Final reconciliation is made in the SUT framework. For detailed information about the implementation of recommendations, see Section 3.12.
- Recommendations from the GNP Committee Task Force on Household Budget Surveys. HBS raw data are constantly compared with information derived from other surveys (SBS, PSFS, other sources). In addition, all appropriate adjustments for differences in population, concepts and definitions are undertaken to convert raw HBS data into the corresponding estimates required for NA purposes. For further information, see Section 5.7.
- Recommendations from the GNP Committee Task Force on Intrastat. In Estonia, nationally compiled foreign trade data for the country are comparable with the data of other trade partners. Eurostat compares the monthly statistics on exports and imports of goods between Member States and informs Estonia of the main problems. Based on this information, these problems are solved immediately. In addition, the supply and use tables for imports and exports and domestic output are compiled as an integrated part of the supply and use table framework. Thus, imports are confronted with domestic use and domestic output with exports regularly on an annual basis during the balancing of the supply and use tables. For further information, see Sections 5.13 and 5.15.

7.2. Allowances for exhaustiveness in the expenditure approach

7.2.1. Identification of types of non-exhaustiveness (for which adjustments are needed)

An overview of the identified areas of absence, evasion and exemption (as defined in Commission Decision 94/168/EC on exhaustiveness) is provided in Table 7.26 below.

Table 7.26 Summary of non-exhaustiveness adjustments by expenditure component, 2021
(million euros)

Element of non-exhaustiveness	N1	N2	N3	N4	N5	N6	N7	Total	As % of GDP
Household final consumption expenditure	0.0	121.6	45.4	0.0	0.0	0.0	151.9	318.8	1.0
NPISH final consumption expenditure	0.0	0.0	0.0	0.0	0.0	0.0	-3.2	-3.2	0.0
General government final consumption expenditure	0.0	0.0	0.0	0.0	0.0	0.0	-243.1	-243.1	-0.8
Gross fixed capital formation	0.0	0.0	0.0	0.0	0.0	0.0	453.3	453.3	1.4
Changes in inventories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acquisitions less disposals of valuables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exports of goods and services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Imports of goods and services	0.0	30.5	0.0	0.0	0.0	0.0	0.0	30.5	0.1
Total	0.0	91.2	45.4	0.0	0.0	0.0	358.8	495.3	1.6
As % of GDP	0.0	0.3	0.1	0.0	0.0	0.0	1.1	1.6	

For GDP calculations by the expenditure approach, various statistical and administrative data sources are used. The quality and coverage of these sources vary greatly and therefore several adjustments are needed to achieve exhaustive estimates for each component.

The biggest part of the adjustments are made for household final consumption expenditure. There are two main reasons: the low response rate among the richest households in the HBS, and purchases of goods and services not covered by statistical surveys.

Estimates for tips, income in kind, own produced products and also for illegal goods and services (including narcotics, prostitution and smuggling of alcoholic beverages, tobacco, medicaments and motor fuel) are obtained directly from the production approach.

In Estonia, on the expenditure side, no estimates for non-exhaustiveness types N1, N4, N5 and N6 are made. Additionally, in the case of the final consumption expenditure of the general government, changes of inventories, acquisitions less disposals of valuables and exports of goods and services, no adjustments are made for exhaustiveness.

On the expenditure side, the following explicit exhaustiveness adjustments are made:

- Types of non-exhaustiveness identified for absence because of illegal producers that fail to register (N2). For HFCE, estimates for the consumption of illegally produced goods and services are made, which are derived from the production side. Narcotics, prostitution and the smuggling of alcoholic beverages, tobacco, medicaments and motor fuel are handled as illegal goods and services.

Imports of goods and services include the import of illegally produced goods and services (narcotics and the smuggling of alcoholic beverages, tobacco, medicaments and motor fuel). The estimates are derived from NA, from the production side.

See detailed information in Section 7.1.3.2 above.

- Types of non-exhaustiveness identified for exemption because of producers not obliged to register (N3). This type of non-exhaustiveness contains estimates made for the production of goods for own consumption. For HFCE, estimates for food and forestry are derived from the production side. See the detailed description in Section 7.1.3.3 above.
- Types of non-exhaustiveness identified because of statistical deficiencies in data (N7).

For HFCE, this type of non-exhaustiveness adjustment includes estimates for wages and salaries in kind and for tips paid to taxi drivers and in hotels and restaurants. These adjustments are derived directly from the production side.

In the final consumption expenditure of NPISH, adjustments are made for income in kind treated as wages and salaries in kind.

For GFCF, other statistical deficiencies cover own-account estimates of market producers.

For the final consumption expenditure of the general government, explicit exhaustiveness adjustments (N7) include estimates for own-account GFCF.

Non-exhaustiveness adjustments (type N7) for the general government's final consumption cover expenditures on own-account GFCF (own-account R&D, software, and originals).

Own-account production is included in the general government output under sum of costs, and therefore no adjustments are needed on the production side.

7.2.2. Adjustments made for the different types of non-exhaustiveness

Next, overview tables for the expenditure components of GDP are provided, linking the identified types and elements of non-exhaustiveness to the exhaustiveness methods.

7.2.2.1. Household final consumption expenditure

Table 7.27 below provides an overview of the types and elements of non-exhaustiveness in HFCE.

Table 7.27 Types and elements of non-exhaustiveness in HFCE, 2021
(million euros)

Element of non-exhaustiveness	Illegal activities	Income in kind	Tips	Consumption of own produced products	Total: methods	% in total
N1					0.0	0.0
N2	121.6				121.6	38.1
N3				45.4	45.4	14.2
N4					0.0	0.0
N5					0.0	0.0
N6					0.0	0.0
N7		124.8	27.0		151.9	47.6
Total: elements	121.6	124.8	27.0	45.4	318.8	100.0
% in total	38.1	39.2	8.5	14.2	100.0	

In HFCE, the total amount of adjustments for non-exhaustiveness is 318.8 million euros (this is 2.1% of total HFCE). The biggest part of the adjustments is income in kind: the estimated value is 124.8 million euros (0.8% of total HFCE). The second-largest item is illegal activities at 121.6 million euros (0.8% of total HFCE); the third-largest item is consumption of own produced products at 45.4 million euros (0.3% of total HFCE). The smallest estimation is for tips at 27.0 million euros (0.2% of total HFCE).

7.2.2.2. NPISH final consumption expenditure

In the NPISH sector, non-exhaustiveness estimates include 3.2 million euros for income in kind, own-account software and R&D for own final use.

7.2.2.3. Gross fixed capital formation

Non-exhaustiveness adjustments for GFCF cover expenditures on own-account GFCF by market producers (non-exhaustiveness type N7; adjustments for own-account R&D, software, construction and originals by market producers). The types and elements of non-exhaustiveness in GFCF are presented in Table 7.28.

Table 7.28 Types and elements of non-exhaustiveness in GFCF, 2021
(million euros)

Element of non-exhaustiveness	Other	Total: methods	% in total
N1			
N2			
N3			
N4			
N5			
N6			
N7	453.3	453.3	100.0
Total: elements	453.3	453.3	100.0
% in total	100.0	100.0	

7.2.2.4. Imports of goods and services

Non-exhaustiveness adjustments for imports of goods and services cover the import of illegally produced goods and services (narcotics and the smuggling of alcoholic beverages, tobacco,

medicaments and motor fuel). Estimates are derived from NA, from the production side. In 2021, the size of adjustments is 30.5 million euros. See detailed information in Section 7.1.3.2 above.

7.2.3. Exhaustiveness methods

Next, a detailed description of each adjustment method applied to address the identified elements and types of non-exhaustiveness is provided.

7.2.3.1. Illegal activities (N2)

For HFCE, estimates for the consumption of illegally produced goods and services are made, which are derived from the production side. Narcotics, prostitution and the smuggling of alcoholic beverages, tobacco, medicaments and motor fuel are handled as illegal goods and services.

For imports of goods and services, estimates are made for the import of illegally produced goods and services (narcotics and the smuggling of alcoholic beverages, tobacco, medicaments and motor fuel). Estimates are derived from NA, from the production side. See detailed information in Section 7.1.3.2 above.

In 2021, total adjustments for illegal activities constitute 121.6 million euros on the expenditure side, which is 0.4% of the GDP.

7.2.3.2. Non-market household producers involved in production of goods for own consumption (N3)

This type of non-exhaustiveness contains estimates made for expenditures on goods produced for own consumption by non-market household producers. For HFCE, estimates for food and forestry are derived from the production side. Please see the detailed description in Section 3.1 of the production approach. In 2021, this adjustment was 45.4 million euros, i.e. 0.1% of the GDP.

7.2.3.3. Other types of non-exhaustiveness (N7)

For HFCE, adjustments for this type of non-exhaustiveness include estimations for wages and salaries in kind and for tips paid to taxi drivers and in hotels and restaurants. These estimations are derived from the production side. Income in kind estimations are based on the HBS data and administrative data from the Tax and Customs Board. For a detailed description, see Section 7.1.3.5.

In the final consumption expenditure of NPISH, the adjustments are the same as for the production approach, i.e. income in kind is treated as wages and salaries.

Gross fixed capital formation includes own-account GFCF by market producers. For more information, see Section 7.2.2.4.

For the general government sector, own-account GFCF includes own-account R&D, software, and originals.

7.3. Allowances for exhaustiveness in the income approach

The income approach is not independent as some components, such as operating surplus and mixed income, are derived residually from the production side. In the production approach, all required adjustments are made to achieve exhaustiveness. Therefore, income estimates include all the necessary adjustments to achieve exhaustiveness.

Table 7.29 outlines the identified areas of absence, evasion and exemption (as defined in Commission Decision 94/168/EC on exhaustiveness).

Table 7.29 Summary of non-exhaustiveness adjustments by income component, 2021
(million euros)

Element of non-exhaustiveness	Total: methods	Employment method	Illegal activities	Income in kind	VAT fraud without complicity	Other
N1	249.9					249.9
N2		84.8				84.8
N3					107.5	107.5
N4						0.0
N5						0.0
N6	338.4					338.4
N7			124.8		545.4	670.2
Total: elements	588.3	84.8	124.8	0.0	652.9	1,450.9
% in total	40.5	5.8	8.6	0.0	45.0	100.0

Chapter 8. The transition from GDP to GNI

8.0. Introduction

This chapter outlines the transition from GDP to GNI. GNI equals GDP minus primary income payable by resident institutional units to non-resident institutional units plus primary income receivable by resident institutional units from the rest of the world (ROW). Primary income mainly comprises compensation of employees, taxes on production and imports paid to the institutions of the EU, subsidies received from the institutions of the EU, and property income payable to / receivable from the ROW.

The next table shows the transition from GDP to GNI by component in 2021.

Table 8.1 Transition from GDP to GNI, 2021
(million euros)

	Indicator	Value	% of GNI
	Gross Domestic Product	31,453.3	102.4
+	Compensation of employees received from the ROW (D.1)	343.3	1.1
-	Compensation of employees paid to the ROW (D.1)	144.4	0.5
-	Taxes on production and imports paid to the institutions of the EU (D.2)	-67.3	-0.2
+	Subsidies received from the institutions of the EU (D.3)	181.5	0.6
+	Property income received from the ROW (D.4)	1,070.1	3.5
	<i>interest (D.41)</i>	277.7	0.9
	<i>distributed income of corporations (D.42)</i>	546.4	1.8
	<i>reinvested earnings on FDI (D.43)</i>	196.7	0.6
	<i>other investment income (D.44)</i>	49.3	0.2
-	Property income paid to the ROW (D.4)	2,247.2	7.3
	<i>interest (D.41)</i>	213.0	0.7
	<i>distributed income of corporations (D.42)</i>	1,247.0	4.1
	<i>reinvested earnings on FDI (D.43)</i>	776.5	2.5
	<i>other investment income (D.44)</i>	10.7	0.0
=	Gross National Income (GNI)	30,724.0	100.0

The ROW account compiled by Statistics Estonia is based on the Balance of Payments (BOP) compiled by Eesti Pank.

Under the Eesti Pank Act²¹ (clause 2 (2) 6), Eesti Pank is responsible for compiling the balance of payments and international investment position of Estonia, and this is one of the key tasks of the central bank. Subsection 34 (1) of this Act entitles Eesti Pank to obtain, free of charge, the information needed for drawing up Estonia's balance of payments from all state and local government agencies and legal persons that conduct cross-border economic transactions in the territory of Estonia.

In addition to the Eesti Pank Act, the Official Statistics Act (10/06/2010) also sets out the compilation of the balance of payments. Under subsection 8 (1), Eesti Pank must collect official

²¹ <https://www.riigiteataja.ee/en/eli/ee/Riigikogu/act/529042020003/consolide>

statistics for the purpose of the balance of payments. Eesti Pank and the respondents are to follow all the provisions of the Official Statistics Act related to conducting surveys and submitting, protecting and disseminating data, and other provisions related to the parties' responsibilities. Under subsections 39 (1) and (3), Eesti Pank has the right to demand data or to impose a penalty payment on companies that fail to submit data on time or that submit distorted data.

Balance of payments reporting by Estonian credit institutions is also regulated by decrees issued by the Governor of Eesti Pank.

By law, Eesti Pank must ensure the full organisational, technological and physical protection of individual data related to all balance of payments transactions. Data are used for statistical purposes only and disseminated in aggregate form without identifying features.

The BOP accounts are compiled according to the methodological principles outlined in the 6th Edition of the IMF Balance of Payments and International Investment Position Manual (BPM6), which is consistent with ESA 2010 principles.

The BOP registers the transactions of resident institutional units with non-residents (see Section 5.10.1. for definitions). As the BOP is compiled from the point of view of the domestic economy rather than the ROW, any necessary adjustments are made. The BOP data are transferred to NA transactions in the ROW accounts without adjustment.

Integration of the BOP accounts with the national accounts is reinforced by the concordance between BOP concepts and the ROW account in terms of definitions of residence, valuation, time of recording of transactions, and currency conversion procedures. The national BOP registers transactions using current market prices and the accrual concept of accounting, which is consistent with the national accounts' requirements.

Thus, output is recorded when produced, not when it is paid for by a purchaser, and the sale of assets is recorded when the asset changes owner, not when the corresponding payment is made. Interest is recorded in the accounting period when it accrues, regardless of whether or not it is actually paid in that period. Foreign currency transactions are converted to national currency at the market exchange rate prevailing at the time of the transaction.

The BOP compilation system combines statistical surveys of economic agents, the International Transactions Reporting System (ITRS), and administrative data sources (see Section 10.3.12).

Most of the data are collected directly by Eesti Pank from data providers using surveys and the ITRS. The data are supplemented with information from various administrative sources (including data collected by Statistics Estonia with surveys) and with estimates.

The box below shows the main data sources for the compilation of the main components used for the transition from GDP to GNI.

		Survey system for enterprises	Other surveys (credit institutions, Central Bank)	ITRS	Administrative data					Estimations / models
					Statistics of investment funds	Centralised Securities Database	Central Depository for Securities	Public Sector Financial Statements Database	Tax and Customs Board	
Compensation of employees (D.1)	Credits								X	X
	Debits							X	X	X
Taxes on production and imports paid to the institutions of the EU (D.2)	Debits							X		
Subsidies received from the institutions of the EU (D.3)	Credits							X		
Interests (D.41)	Credits	X	X	X	X	X	X	X	X	X
	Debits	X	X	X			X	X		
Distributed income of corporations (D.42)	Credits	X	X	X						
	Debits	X	X				X			X
Reinvested earnings on FDI (D.43)	Credits	X	X							X
	Debits	X	X							X
Other investment income (D.44)	Credits	X		X	X			X		
	Debits	X		X	X			X		

8.1. Compensation of employees

The next table shows exports and imports of compensation of employees.

Table 8.2 Compensation of employees, 2021
(million euros)

	Export	Import
Total	343.3	144.4
incl. FI	138.0	9.9

Compensation of employees consists of wages, salaries and other benefits in cash or in kind payable by an employer to an employee in return for work done by the latter during the accounting period. Included are contributions paid by employers on behalf of employees to social security schemes or to private insurance or pension funds and employee's personal income tax. In the BOP, compensation of employees is recorded when the employer and the employee are resident in different economies.

Compensation of employees covers those workers who have worked abroad for less than one year. It also includes residents working for a non-resident employer but based in their own

country. Included are seasonal workers, border workers and permanent workers who are not residents of the country in which they are employed.

Though embassies and consulates are considered extraterritorial to the economy in which they are located, the compensation received by the local staff of these institutional entities is classified as paid to resident entities.

To identify the applicable data sources, employees can be divided as follows:

- 1) border and seasonal workers;
- 2) permanent workers;
- 3) employees working for foreign embassies, consulates, etc.

A detailed description of the data sources used for estimating the compensation of employees is given in the box below.

	In Estonia	Abroad
Border and seasonal workers		
Data sources	1) Tax and Customs Board – quarterly income statements from private individuals on an aggregated basis with country breakdown. The calculation of the social contribution in Estonia is made in accordance with Estonian tax legislation. Data on social security taxes and individual income taxes have also been available. 2) Estimate of compensation for non-registered workers (construction services, restaurants) 3) OÜ Positium (for estimates)	1) Tax and Customs Board – data on the number of employees is estimated from the annual income statements of private individuals: data are reported on an aggregated basis with country breakdown. By comparing the official data to the data published by the press and mirror data from partner countries, an expert estimate is made about unofficial workers; 2) Estonian Labour Force Survey (quarterly) 3) Other countries' databases 4) OÜ Positium (for estimates)
Permanent workers		
Data sources	1) Tax and Customs Board – quarterly income statements from private individuals on an aggregated basis with country breakdown. The calculation of the social contribution in Estonia is made in accordance with Estonian tax legislation. Data on social security taxes and individual income taxes have also been available. 2) Estimate of compensation for unregistered workers (construction services, restaurants) 3) OÜ Positium (for estimates)	1) Tax and Customs Board – data on the number of employees are estimated from the annual income statements of private individuals. For comparison, mirror data from partner countries are used; 2) Other countries' databases (for estimates); 3) Estonian Labour Force Survey (quarterly) 4) OÜ Positium (for estimates)
Employees working for foreign embassies, consulates, etc.		
Data sources	Tax and Customs Board – annual income statements of private individuals. It is an insignificant category, though covered properly.	Quarterly data from the Public Sector Financial Statements Database (PSFS system), which includes wages and salaries paid to non-resident workers of embassies, consulates and military staff abroad. Data are reported on an aggregated basis. It is an insignificant category, though covered properly.

A rough description of the calculation of compensation of employees is as follows.

In Estonia:

$$CoE = QI + SQ$$

where:

QI - quarterly income statements of private individuals on total amounts (including withholding income tax and social contribution taxes payable by employees);

SQ - social contribution taxes payable by employers on total amounts.

Abroad:

$$CoE = NW * AQE * (1 + \left(\frac{PSC}{100}\right))$$

where:

NW - number of workers;

AQE - average quarterly earnings (including withholding income tax and social contribution taxes payable by employees);

PSC - percentage of social contribution payable by employers.

At the moment, there is no regular exchange of data with neighbouring countries. However, comparisons at the aggregate level with Finnish data are made on a yearly basis. For Estonia, the most significant part of the compensation of employees is earned in Finland. Aggregate level comparisons are also made with Latvian data.

The data sources used guarantee that the cross-border flows related to compensation of employees are mostly recorded on an accrual basis. Wages and salaries are declared on a gross basis (including withholding income tax) without social contribution tax. The social contribution paid by residents to foreign social security schemes or similar foreign private insurance or pension funds should be included as part of the compensation of employees (ESA 2010 §4.02). To calculate the social contribution of each country, the percentage of the national insurance contribution is taken from the KPMG online Tax Database and from the countries' online resources. The calculation of the social contribution in Estonia is made in accordance with Estonian tax legislation.

Employers' social contributions are social contributions payable by employers to social insurance schemes to secure social benefits for their employees. Compensation of employees in Estonia includes the actual (obligatory or required) social contributions payable by employers. It also includes optional pension contributions (an insignificant category) (ESA 2010 §4.09–4.10). Compensation of employees in Estonia does not include imputed social contributions. Information about all social contributions has been obtained from the Tax and Customs Board since 2013.

Compensation of employees abroad includes all obligatory or required social contributions in other countries payable by employers but does not include imputed social contributions.

Social contributions, income taxes and other payments payable by employees are contained in gross salary, so they are included in the compensation of employees (ESA 2010 §4.03).

Compensation of employees also includes wages, salaries or other benefits from enclaves of extra-territorial organisations in Estonia, such as embassies, consulates and military bases. Data for these organisations are obtained quarterly from administrative sources (the Tax and Customs Board). The data are reported on the total amounts payable.

Data about Estonia's embassies, consulates and military staff abroad are obtained quarterly from the PSFS system, which includes wages and salaries paid to non-resident workers of embassies, consulates and military staff abroad. The data are reported on the total amounts payable.

Compensation of employees from other extra-territorial organisations abroad is calculated in the same way as for other employees abroad. The number of workers is estimated.

8.2. Taxes on production and imports

In 2021, taxes on production and imports paid to the institutions of the EU amounted to 67.3 million euros, i.e. 0.2% of GNI.

Statistics Estonia uses a detailed cash income report from the Tax and Customs Board, which becomes available at t+1 month. For some less significant taxes, the PSFS are used, and for specific cases where some fees are to be treated as taxes following Eurostat's advice, a few additional sources are used. For all taxes, the sub-sector which has the authority to impose the tax and set the rate is determined and the tax is then classified using this information. Taxes classified as S.2 in 2021 were customs duties and contributions to the EU Single Resolution Fund. Customs duties were classified as D.2121 as instructed by ESA 2010 4.18 a), while contributions to the Single Resolution Fund were classified as D.29.

Customs duties and contributions to the EU Single Resolution Fund in their entirety are recorded as direct tax revenue of the EU. The 20% of customs duties remaining to the Member State to cover collection expenses is treated as sale of services to the EU and is recorded as payments for non-market output (P.131) in the general government accounts.

GNI based own resources and VAT based own resources are recorded under current transfers (D.7). Information about transactions is received from the PSFS.

Taxes collected on behalf of the institutions of the EU for 2021 were customs duties and contributions to the EU Single Resolution Fund.

ESA 2010 offers three possible methods for complying with the accrual time of recording. Two of them are applicable when declarations and assessments are used and one is for cash receipts. Since cash receipts are used in Estonia, the third method is used. Under this methodology, the data must be time-adjusted so that the cash is attributed when the activity that generated the tax liability took place. This adjustment is based on the average time difference between the activity and the cash tax receipt.

Statistics Estonia applies this methodology when three criteria are satisfied:

- the tax has to be a significant proportion of the total tax revenue, and the threshold in most cases is 1%;
- there needs to be a lag between the time when the tax liability is created and the time when the tax is paid;
- the tax receipts need to be volatile over time.

Customs duties account for 0.6% of the total tax revenue and, therefore, do not satisfy these conditions and are not time-adjusted. The cash based data are, however, compared with declarations for major discrepancies. Therefore, even if the adjustment were used, the effect would be negligible.

Government revenues from proceeds of sales of emission allowances in the EU Emission Trading System (EU ETS) are recorded as taxes D.29 at the time the allowances are surrendered, i.e. the next year after the sales in the primary auction. Allowances are counter-parted nearly wholly in S.2, using the pro rata approach of greenhouse gas totals by country. In 2021, government revenues from the sale of emission allowances amounted to 141.6 million euros, i.e. 0.5% of GNI. However, allowances bought or sold by Estonian corporations are recorded in the capital account as acquisitions/disposals of non-produced nonfinancial assets, not as D.29 at the time the allowances are surrendered.

8.3. Subsidies granted by EU institutions

In 2021, subsidies granted by the institutions of the EU amounted to 181.5 million euros, i.e. 0.6% of GNI.

The main data sources are:

- 1) the accrual based PSFS;
- 2) the annual reports of the Estonian Agricultural Registers and Information Board;
- 3) the data from units responsible for implementing the various programmes, such as Enterprise Estonia, the Environmental Investment Centre or the Estonian Film Foundation.

In Estonia, the following subsidies for products (D.31) are financed from the EU budget: (1) subsidies for agriculture and (2) subsidies for exports of agricultural goods.

Agricultural subsidies are granted for various purposes. Subsidies for products consist of subsidies granted based on the number of livestock or units of area. Subsidies providing support to dairy farming are recorded under subsidies for production (D.39).

Other subsidies for production (D.39) include various kinds of support provided to enterprises to support their production (excluding support for purchasing capital goods, which is recorded as investment grants). For example:

- subsidies for agriculture that are not recorded as subsidies for products;
- various assistance benefits provided to enterprises to cover expenditures on training, development, etc.;
- subsidies to cover the cost of labour.

Data from PSFS are used for subsidies. The PSFS consists of accrual bookkeeping data from public sector units, where the expenditures of the implementing agency from transferring the EU grants are recorded in the same period that the beneficiary incurs the subsidised expenditures. This practice is in accordance with the accrual time of recording.

Information about the recipient of the grant is also presented in the PSFS for each implementing agency. For public sector units, the specific unit is identified by a specific code, while for private sector units, the code indicating the legal form (enterprise, non-profit institution, etc.) of the recipient is used. By using this information, it is possible to distinguish between grants from the EU by the recipient sector.

The PSFS also provides information about the type of grant provided from EU funds – whether it is intended to finance investment or some other kind of current expenditure. The distinction between subsidies, investment grants and other current transfers is based on a combination of information about the type of grant and the recipient sector.

8.4. Cross-border property income

8.4.1. Interest

Introduction

Interest is a form of investment income that is receivable by the owners of certain kinds of financial assets, namely deposits, debt securities, loans and other accounts receivable, for putting the financial assets at the disposal of another institutional unit. Income on SDR holdings and SDR allocations is also included in interest.

Income derived from the use of tangible produced assets and realised and unrealised holding (capital) gains and losses or exchange rate revaluations are excluded from income and are treated accordingly as services or change in the value of investments or as part of the market price in the case of real transactions.

Settlements in respect of interest rate swaps and forward rate agreements are not regarded as interest income but are recorded as transactions in financial derivatives in the financial account. Table 8.3 gives an overview of transactions related to interest receivables and payables.

Table 8.3 Interest income to/from the ROW, 2021
(million euros)

	2021
Interest receivable from the ROW	277.7
Direct investment	122.2
<i>Central bank</i>	0.0
<i>Other MFIs</i>	0.0
<i>General government</i>	0.0
<i>Other sectors</i>	122.2
<i>Financial corporations other than MFIs</i>	47.1
<i>NFC, HH and NPISH</i>	75.1
Portfolio investment	103.6
<i>Central bank</i>	64.6

	2021
<i>Other MFIs</i>	-7.1
<i>General government</i>	1.1
<i>Other sectors</i>	44.9
<i>Financial corporations other than MFIs</i>	40.5
<i>NFC, HH and NPISH</i>	4.4
Other investment	35.9
<i>Central bank</i>	0.1
<i>Other MFIs</i>	1.7
<i>General government</i>	4.6
<i>Other sectors</i>	29.5
<i>Financial corporations other than MFIs</i>	11.4
<i>NFC, HH and NPISH</i>	18.0
Reserve assets	16.1
<i>Of which: interest before FISIM</i>	176.8
Interest payable to the ROW	213.0
Direct investment	115.4
<i>Central bank</i>	0.0
<i>Other MFIs</i>	0.0
<i>General government</i>	0.0
<i>Other sectors</i>	115.4
<i>Financial corporations other than MFIs</i>	45.3
<i>NFC, HH and NPISH</i>	70.1
Portfolio investment	37.4
<i>Central bank</i>	0.0
<i>Other MFIs</i>	6.3
<i>General government</i>	3.2
<i>Other sectors</i>	27.9
<i>Financial corporations other than MFIs</i>	6.9
<i>NFC, HH and NPISH</i>	21.0
Other investment	60.1
<i>Central bank</i>	0.2
<i>Other MFIs</i>	16.0
<i>General government</i>	4.2
<i>Other sectors</i>	39.6
<i>Financial corporations other than MFIs</i>	35.8
<i>NFC, HH and NPISH</i>	3.8
<i>Of which: interest before FISIM</i>	223.0
Net distributed income to/from the ROW	64.8
<i>% of current account balance</i>	-5.6
<i>% of GDP</i>	0.2

Data sources

The next table provides evidence on interest income receivable and payable, broken down by data sources, in 2021 (million euros).

Table 8.4 Interest income to/from the ROW by data source, 2021
(million euros)

	Receivable	Payable
Interest income	277.7	213.0
S.11 Non-financial corporations	94.6	94.7
A. Survey of companies, excluding insurance companies, credit institutions and transportation companies	76.0	85.6
B. Survey of transportation companies	12.9	4.2
F. International Transactions Reporting System (ITRS)	1.6	2.3
I. Centralised Securities Database	3.2	2.5
J. Business Register of Estonia and Central Register of Securities	0.9	
S.12 Financial corporations	174.4	110.5
A. Survey of companies, excluding insurance companies, credit institutions and transportation companies	57.8	81.2
B. Survey of transportation companies	0.1	
C. Survey of insurance companies	0.3	0.2
D. Statistical survey of credit institutions	1.7	22.2
E. BOP survey for Eesti Pank	16.2	0.2
F. International Transactions Reporting System (ITRS)	0.3	0.4
H. Investment funds' reports	0.0	
I. Centralised Securities Database	98.0	6.2
J. Business Register of Estonia and Central Register of Securities	0.0	
S.13 General government	5.7	7.4
G. Public Sector Financial Statements System	4.6	7.8
H. Investment funds' reports	0.0	
I. Centralised Securities Database	1.1	-0.4
S.14 Households	3.0	0.2
I. Centralised Securities Database	1.3	
J. Business Register of Estonia and Central Register of Securities	1.7	0.2
S.15 Non-profit institutions serving households	0.0	
I. Centralised Securities Database	0.0	

A detailed description of the data sources used for estimating interest is provided in the box below.

	Receivable	Payable
Central bank		
Data sources	1) The BOP survey for Eesti Pank 2) The Centralised Securities Database	1) The BOP survey for Eesti Pank
Estimation of exhaustiveness	Full coverage	Full coverage
Other MFIs (deposit-taking corporations, except the central bank)		
Data sources	1) Credit institutions' income statement 2) The Centralised Securities Database	1) Credit institutions' income statement 2) The Centralised Securities Database
Estimation of exhaustiveness	Full coverage	Full coverage
General government sector		

	Receivable	Payable
Data sources	1) Public Sector Financial Statements Database 2) The State Guarantee Fund reports on interest receivable on fund investments made with deposit guarantee payments. 3) The Centralised Securities Database	1) The Ministry of Finance / State Treasury reports on interest payable on government sector official loans. 2) Public Sector Financial Statements Database
Estimation of exhaustiveness	Full coverage	Full coverage
Financial corporations other than MFIs		
Data sources	1) Survey system (Form E, Form K) data on interest receivable on financial claims 2) The ITRS 3) The Centralised Securities Database	1) Survey system (Form E, Form K) data on interest payable on financial liabilities 2) The ITRS 3) The Centralised Securities Database
Estimation of exhaustiveness	Representative coverage	Representative coverage
Non-financial corporations		
Data sources	1) Survey system (Form E, Form T) data on interest earned on financial claims 2) The ITRS 3) The Centralised Securities Database	1) Survey system (Form E, Form T) data on interest payable on financial liabilities 2) The Central Register of Securities database gives information on interest payable on public issues of debt securities. 3) The ITRS 4) The Centralised Securities Database
Estimation of exhaustiveness	Representative coverage	Representative coverage
Households and non-profit institutions		
Data sources	1) Estimations are based on the Household Finance and Consumption Survey (HFCF), International Transactions Reporting System (ITRS) and interest rate information from countries' webpages. 2) The Tax and Customs Board – annual income statements of private individuals provide data on officially declared earnings on direct external investments. 3) The Centralised Securities Database	1) Estimations are based on the Household Finance and Consumption Survey (HFCF), International Transactions Reporting System (ITRS) and interest rate information from countries' webpages.
Estimation of exhaustiveness	Sufficient coverage, although information on interest earned on investments made abroad directly is poor (this activity is considered as negligible given the current economic situation)	Poor coverage, although the probability of direct access of domestic households to the external loan market is low.

Methods

In line with the international standards, interest is recorded on an accrual basis to ensure that the cost of capital continually matches the provision of capital. Accrued interest is based on:

- market value for stocks and on the prevailing interest rate in the market at the time of compiling the accrued interest for discounted or zero-coupon bonds or money market instruments;
- the substantial difference between the discounted issue price and the value at maturity of non-tradable zero-coupon and other deep-discounted bonds;

- the prevailing interest rate at the time of issuance (the “debtor principle”) for fixed interest rate bonds.

Cross-border flows of accrued interest on debt securities are calculated using the debtor approach. Interest accruals are determined using the combined effect of accrued interest and income due to the difference between the issue and redemption prices.

Interest is recorded before the deduction of taxes levied on it. Interest received and paid is recorded inclusive of grants for interest relief, irrespective of whether those grants are directly paid to financial institutions or to beneficiaries.

For index-linked securities, interest calculations are made using interest accrual taking the debtor approach, which means that they are fixed at the interest rate at inception. Accordingly, the difference from the actual price index is calculated through holding gains and losses. In 2021, the average share of index-linked debt securities position was 0.35% of the total debt securities asset positions.

Transactions under financial derivative agreements are recorded under financial derivatives, not as property income.

Interest is recorded before the deduction of any taxes in general. If a single interest transaction is covered via the actual ITRS cash flow, no adjustment is made for estimating taxes or the accrual principle; however, this is an indication of a need for immediate amendment of the survey sample.

The interest paid/received by credit institutions or other financial intermediaries is recorded by eliminating the margins that represent implicit charges made by those financial intermediaries. Accordingly, the amounts of interest paid to them are reduced by implicit charges, and the amounts of interest received by depositors are increased. The values of the charges are treated as payments for services rendered by financial intermediaries to their customers and not as payments of interest.

8.4.1.1. Interest from direct investment

Interest flows cover accrued income on debt in a direct investment relationship, i.e. interest on inter-company loans and earnings from investment in property. The following breakdowns are available: short-term capital, long-term capital, trade credits and other capital.

8.4.1.2. Interest from portfolio investment

Interest from portfolio investments is available in two categories: interest on short-term debt securities (money market instruments) and interest on long-term debt securities (bonds and notes).

The domestic households sector is not currently surveyed. Interest received by households is taken into account indirectly via domestic financial intermediaries. Interest earned directly abroad is estimated using indicative data received from the Tax and Customs Board. The international Coordinated Portfolio Investment Survey²² finds that the external assets of

²² More information about the *Coordinated Portfolio Investment Survey*, regularly conducted by the IMF, can be found at <http://www.imf.org/external/np/sta/pi/cpis.htm>.

Estonian residents are estimated higher in the Estonian BOP reports than in the mirror statistics, which indicates that there is rather complete coverage, and the importance of the households sector could be estimated as negligible.

8.4.1.3. Interest from other investment

The item consists of interest payments related to deposits, loans, trade credits and other accounts receivable and payable, which are determined by applying the original rate of interest to the principal outstanding at each point of time throughout the accounting period. The item also contains inter-company transactions between affiliated banks and affiliated financial intermediaries.

Interest on financial lease and repurchase transactions (repos) is included as an alternative to lending activity.

The fee (interest for default) paid/received for late payments in trade is treated as current transfers, not interest.

Interest earned on accounts abroad by the households sector is estimated.

Interest flows associated with the Intra-Eurosystem (“technical”) financial claims and liabilities related to the issuance of Euro bank notes are recorded as D.41 interest received from the rest of the world, because Estonia has an Intra-Eurosystem (“technical”) asset position. Interest received from the rest of world is taken from a direct data source. The interest rate is based on the main refinancing operations (MRO) rate, which was 0% in 2021.

8.4.2. Distributed income of corporations

Introduction

Distributed income of corporations consists of dividends and withdrawals from income of quasi-corporations.

Dividends include those paid to shareholders, both common and participating preferred stock²³, whether voting or non-voting, according to the contractual relationship between the enterprise and these various types of shareholders, before deduction for withholding taxes. Dividends exclude liquidating dividends and super-dividends. Bonus shares are not treated as transactions or income. Dividends are property income received by owners of shares in direct and portfolio investments.

Withdrawals from income of quasi-corporations include distributed branch profits and income related to notional units. Withdrawals from income of quasi-corporations are received by the owners of direct investments (branches; real estate investments abroad, owned by 10 or fewer investors) and other investments (real estate investments abroad, owned by more than 10 investors).

Table 8.5 gives an overview of transactions related to distributed income receivables and payables.

²³ Income on non-participating preference shares is treated as interest income, because such shares are classified as debt instruments.

Table 8.5 Distributed income paid/received to/from the ROW, 2021
(million euros)

	Receivable	Payable
Distributed income of corporations	546.4	1,247.0
S.11 Non-financial corporations	305.7	668.5
S.121 Central bank	1.2	N/A
S.122 Deposit taking corporations, except the Central Bank	0.0	0.0
S.124 Non-MMF investment funds ²⁴	20.6	71.7
S.125 Other financial intermediaries, except insurance corporations and pension funds	58.6	11.2
S.126 Financial auxiliaries	1.7	220.5
S.127 Captive financial institutions and money lenders	103.1	20.7
S.128 Insurance corporations	16.0	0.0
S.1311 Central government, excluding social security	0.0	N/A
S.14 Households	39.4	N/A
S.15 Non-profit institutions serving households	0.0	N/A
Net distributed income of corporations received - paid from/to the ROW	-700.5	
<i>% of Current Account</i>	60.8	
<i>% of GNI</i>	-2.3	

8.4.2.1. Dividends

Data sources

The primary data source for compiling dividends received from and paid to the ROW is the quarterly enterprise survey. The secondary data sources are the ITRS (for estimating receivables) and the Tax and Customs Board (for estimating payables). The table below gives an overview of the dividends (in million euros) received and paid from/to the ROW by sector and data source.

Table 8.6 Dividends paid/received to/from the ROW, 2021
(million euros)

	Receivable	Payable
Dividends	501.7	1,192.6
S.11 Non-financial corporations	302.0	614.1
A. Survey of manufacturing or non-financial services companies (Form E)	207.3	459.2
B. Survey of transportation companies (Form T)	37.0	44.5
F. International Transactions Reporting System (ITRS)	48.7	2.1
M. Tax and Customs Board		108.3
P. ESCB's Centralised Securities Database	9.0	
S.12 Financial corporations	171.9	578.6
A. Survey of manufacturing or non-financial services companies (Form E)	130.1	279.8
C. Survey of insurance companies (Form K)	0.4	21.2
D. Statistical survey of credit institutions		254.5

²⁴ There were no MMF-s and pension funds in Estonia in 2021.

E. BOP survey for Eesti Pank	1.2	N/A
F. International Transactions Reporting System (ITRS)	11.5	
M. Tax and Customs Board		23.1
P. ESCB's Centralised Securities Database	28.7	
S.13 General government		N/A
G. Public Sector Financial Statements System		
S.14 Households	27.9	N/A
F. International Transactions Reporting System (ITRS)	16.5	
P. ESCB's Centralised Securities Database	11.4	
S.15 Non-profit institutions serving households	0.0	N/A
P. ESCB's Centralised Securities Database	0.0	

A detailed description of data sources for estimating dividends is provided in the box below.

	Receivable	Payable
A. Survey of manufacturing or non-financial services companies (Form E)		
	As reported by the respondent. Amounts exceeding 1 million euros are checked by data managers: are the dividends received or will a claim accrue. Amounts exceeding 10 million euros are tested in order to identify super-dividends. Super-dividends are recorded as financial transactions.	As reported by the respondent. Amounts exceeding 1 million euros are checked by data managers: are the dividends paid or will a liability accrue. Amounts exceeding 10 million euros are tested in order to identify super-dividends. Super-dividends are recorded as financial transactions.
B. Survey of transportation companies (Form T)		
	The same procedure as above	The same procedure as above
C. Survey of insurance companies (Form K)		
	The same procedure as above	The same procedure as above
D. Statistical survey of credit institutions		
	Based on credit institutions' income statement and balance sheet information.	Based on credit institutions' balance sheet information.
E. BOP survey for Eesti Pank		
	As reported	N/A
F. International Transactions Reporting System (ITRS)		
	Sum of cross-border dividend payments received by the enterprises and other institutional units not included in the survey as well by non-respondent (Form E or Form T) enterprises. Transactions starting from 10,000 euros are validated/codified by data managers.	Sum of cross-border dividend payments initiated by non-respondent (Form E or Form T) enterprises. Transactions starting from 10,000 euros are validated/codified by data managers.
G. Public Sector Financial Statements System		
	As reported	N/A
M. Tax and Customs Board		
	N/A	The share of dividends payable by Estonian enterprises to non-resident owners is estimated owner by owner and enterprise by enterprise based on the dividends and other profit distributions reported to the Estonian Tax and Customs Board and based on ownership data available in the Estonian Securities Register (Nasdaq) and the Business Register of Estonia.
P. ESCB's Centralised Securities Database		

	Receivable	Payable
	Income attributable to domestic shareholders of quoted shares is compiled using the dividend payments per share before tax, which are available from the Centralised Securities Database.	N/A

Methods

Dividends are recorded on the date they are declared payable. Reporting is based on accounting standards, which means the accrual principle is used and the majority of agents report by completing survey forms on an accrual basis. Transactions of other data providers – taken into the accounts via the ITRS or the Estonian Tax and Customs Board – are recorded on the date the dividends are paid.

Concerning the payment of stock dividends, the national law²⁵ requires dividends to be paid in money. The dividend may also be paid in other property with the consent of the shareholder, but not in the form of an issue of new shares. Hence, no stock dividends are payable. As stock dividends are not allowed in Estonia and most Estonian foreign equity investments are in countries with similar legal standards, it is assumed that stock dividends receivable are non-existent or negligible.

Bonus shares should be issued in such a way that a shareholder's part of the share capital increases in proportion to the nominal value or book value of the shareholder's shares. Any resolution that is contrary to this is void. These arrangements are not treated as transactions or income.

Exceptional payments by enterprises to their owners out of accumulated reserves or sales of assets are treated as withdrawals of equity and recorded in the financial account. Payments are validated case by case, and the procedure applies only to amounts of over 10 million euros. After recognition and reclassification as a financial transaction, super-dividends are no longer distinguishable from the rest of the equity flows.

There are no adjustments made to exports and imports due to valuation of intra-group transactions within MNEs, because there is no evidence of transfer pricing, and correspondingly, there are no adjustments of dividends to/from the rest of the world.

Recent methodological developments and future tasks

Work in progress: there are no methodological developments in progress.

Future tasks: no methodological developments are foreseen in the near future.

8.4.2.2. Withdrawals from the income of quasi-corporations

Data sources

The primary data source for finding withdrawals from the income of quasi-corporations received from and paid to the ROW is the quarterly enterprise survey. The additional estimation

²⁵ Commercial Code sections 157, 279, 350

methods are used only to cover net operating surplus received by residents as owners of land and buildings in the ROW and paid to non-residents as owners of land and buildings in Estonia.

Table 8.7 Withdrawals from the income of quasi-corporations, 2021
(million euros)

	Receivable	Payable
Withdrawals from the income of quasi-corporations	44.6	54.3
S.11 Non-financial corporations	3.8	54.3
A. Survey of manufacturing or non-financial services companies (Form E)	3.1	2.7
B. Survey of transportation companies (Form T)	0.1	
Z. Estimations	0.6	51.6
S.12 Financial corporations	29.3	
A. Survey of manufacturing or non-financial services companies (Form E)	13.7	
C. Survey of insurance companies (Form K)	15.6	
D. Statistical survey of credit institutions		
Z. Estimations	0.0	N/A
S.14 Households	11.5	N/A
Z. Estimations	11.5	N/A

A detailed description of the data sources for estimating withdrawals from the income of quasi-corporations is provided in the box below.

	Receivable	Payable
A. Survey of manufacturing or non-financial services companies (Form E)		
	As reported by the respondent. Amounts exceeding 1 million euros are checked by data managers: are the withdrawals received or will a claim accrue.	As reported by the respondent. Amounts exceeding 1 million euros are checked by data managers: are the withdrawals paid or will a liability accrue.
B. Survey of transportation companies (Form T)		
	The same procedure as above	The same procedure as above
C. Survey of insurance companies (Form K)		
	The same procedure as above	The same procedure as above
D. Statistical survey of credit institutions		
	Based on credit institutions' income statement and balance sheet information.	Based on credit institutions' balance sheet information.
Z. Estimations		
	The estimations of property income attributed to real estate owners are based on the rate of return of the real estate. The input data are derived from national accounts statistics and the International Transactions Reporting System (ITRS). For further details, see the Methods section below.	The estimations of property income attributed to real estate owners are based on the rate of return of the real estate. The input data are derived from national accounts, the official Land Register and real estate price statistics. For further details, see the Methods section below.

Methods

Distributed profits from quasi-corporations are recorded when they are withdrawn by their owners. Withdrawals from income are recorded gross of any withholding taxes.

Ownership of real estate abroad is treated as investment in notional units classified as non-financial corporations (S.11).

The estimations of the net operating surplus (NOS) received by residents as owners of land and buildings in the ROW and by non-residents as owners of land and buildings in Estonia are based on the assumptions that:

1. The share of dwellings actually waiting for sale or tenant (so-called reserved) among all dwellings is the same for real estate owned by residents and non-residents.
2. The ratio of NOS or distributable property income (withdrawals from the income of quasi-corporations) to the average value of real estate is the same for real estate owned by residents and non-residents.
3. The ratio of NOS or distributable property income (withdrawals from the income of quasi-corporations) to the average value of real estate is the same in all countries.

The rate of return (the ratio of NOS) on real estate owned by households is expressed as:

$$Et_{kv} = \frac{B2NB3N_{S14}}{\frac{AN111_{S140} + AN111_{S141} + AN112_{S140} + AN112_{S141}}{2}}$$

Where Et_{kv} - the rate of return on real estate owned by households;
 $B2NB3N_{S14}$ - the sum of the net operating surplus (ESA2010 B.2n) and net mixed income (ESA2010 B.3n) of the real estate activity of the Estonian household sector;
 $AN111_{S140}$ - dwellings owned by households in Estonia on the balance sheet of non-financial assets and liabilities, at the end of the previous year (ESA2010 AN.111);
 $AN111_{S141}$ - dwellings owned by households in Estonia on the balance sheet of non-financial assets and liabilities, at the end of the year (ESA2010 AN.111);
 $AN112_{S140}$ - other buildings and structures owned by households in Estonia on the balance sheet of non-financial assets and liabilities, at the end of the previous year (ESA2010 AN.112);
 $AN112_{S141}$ - other buildings and structures owned by households in Estonia on the balance sheet of non-financial assets and liabilities, at the end of the year (ESA2010 AN.112).

For 2021, the rate of return (the ratio of NOS) on real estate (excluding land) owned by households is $Et_{kv} = 1,327.3 \div [\frac{1}{2} \times (24,859.4 + 27,416.5 + 1,564.4 + 1,656.9)] \approx 0.048^{26}$. The input data are from national accounts.

Property income attributable to non-resident owners of real estate is expressed as:

$$D422 = t_{kv} \times \frac{RE_{kv0} + RE_{kv}}{2} \div VM_{koe f}$$

Where $D422$ - withdrawals from the income of quasi-corporations attributable to non-resident owners of real estate (ESA2010 D.422);
 t_{kv} - the rate of return (the ratio of NOS) of real estate owned by notional units owned by non-residents: for non-resident households $t_{kv} = Et_{kv} =$

²⁶ Until the data for the reference year become available, the rate of return (Et_{kv}) for the last available year is used.

	0.048, for non-resident enterprises $t_{kv} = Ft_{kv} = 0.002$ (calculated in a similar way as Et_{kv});
RE_{kv0}	- value of real estate owned abroad at the beginning of the reference period;
RE_{kv1}	- value of real estate owned abroad at the end of the reference period;
VM_{koef}	- a coefficient smoothing the difference between the market value of real estate (the methodology applied for the estimation in the international investment position) and the value of real estate in national accounts. The VM coefficient is applicable only to the estimation of amounts payable.

The value of real estate is indicated in the international investment position and calculated

- (a) (for real estate in the ROW) as accumulation of international transactions (validated by the results of the Household Finance and Consumption Survey of Estonia, carried out in 2021, reference date 31.03.2021);
- (b) (for real estate in Estonia) on the basis of real estate owned by non-residents (data are obtained from the Land Register of Estonia) and recent transaction prices of real estate of comparable location, size and purpose (data are obtained from real estate price statistics).

The VM coefficient was estimated on the basis of 2021 census data and the dwelling price index and it is 2.3.

For 2021, the property income receivable by resident households as owners of land and buildings in the ROW is (rough estimation) $0.048 \times \frac{1}{2} \times (236.5 + 270.6) \approx 12.2$ million euros. The actual annual amount was 11.5 million euros (the sum of quarterly estimations). A similar approach is applied in order to estimate the NOS (and withdrawals receivable) of the notional units owned by the resident enterprises not included in the BOP survey population. The rate of return (the ratio of NOS) was 0.002 and the annual amount was 0.6 million euros in 2021.

For 2021, the property income payable to non-resident households from notional units owning real estate in Estonia is (rough estimation) $0.048 \times \frac{1}{2} \times (2,548.8 + 3,288.8) \div 2.3 \approx 60.9$ million euros. The actual annual amount was 51.6 million euros (the sum of quarterly estimations). A similar approach is applied in order to estimate the NOS (and withdrawals payable) of the notional units owned by foreign enterprises. The rate of return (the ratio of NOS) was 0.002 and the annual amount was 0 million euros in 2021.

Recent methodological developments and future tasks

Work in progress: there are no methodological developments in progress.

Future tasks: no methodological developments are foreseen in the near future.

8.4.3. Reinvested earnings (RIE) of foreign direct investment (FDI)

Introduction

Eesti Pank is the agency responsible for the compilation of foreign direct investment statistics (including reinvested earnings). It is also responsible for the related data collection.

Reinvested earnings refer to earnings on equity accruing to direct investors less distributed earnings, proportionate to the percentage ownership of the equity owned by the direct investor(s). Reinvested earnings do not cover profit or loss arising from changes in the valuation of assets.

Reinvested earnings apply only between a direct investment enterprise and its immediate direct investor. Depending on the residency of the direct investment enterprise, RIE is recorded in the primary income account as receivable if the direct investment enterprise is abroad and the direct investor is a resident, or as payable if the direct investment enterprise is a resident and the direct investor is a non-resident.

A direct investment enterprise is an enterprise that is controlled or influenced by an investor that is a resident of another country. The investor controls the enterprise by holding directly or indirectly more than 50% of the voting rights. A controlled enterprise is, for example, a subsidiary or the subsidiary of a subsidiary. An influenced enterprise is an enterprise where the investor holds directly or indirectly 10–50% of the voting rights: an associate, a subsidiary's associate or an associate of a subsidiary's subsidiary, but not an associate of an associate. Branches located abroad are also direct investment enterprises. In addition to direct investors and direct investment enterprises, the framework of direct investment relationships (FDIR) also covers fellow enterprises.²⁷

Table 8.8 gives an overview of transactions related to reinvested earnings on foreign direct investments.

Table 8.8 Reinvested earnings on foreign direct investment paid/received to/from the ROW, 2021
(million euros)

	Receivable	Payable
Reinvested earnings on foreign direct investment	196.7	776.5
S.11 Non-financial corporations	97.0	764.5
S.121 Central bank		N/A
S.122 Deposit taking corporations, except the Central Bank	78.5	68.1
S.124 Non-MMF investment funds ²⁸	0.0	0.0
S.125 Other financial intermediaries, except insurance corporations and pension funds	- 1.6	- 4.1
S.126 Financial auxiliaries	- 0.3	9.0
S.127 Captive financial institutions and money lenders	11.2	- 66.0
S.128 Insurance corporations	11.7	4.9
S.1311 Central government, excluding social security		N/A
S.14 Households	Not covered ²⁹	N/A
S.15 Non-profit institutions serving households	Not covered ³⁰	N/A

²⁷ A more detailed description (with illustration) of FDIR is provided to the respondents of BOP surveys (see Chapter 10.4) <https://www.eestipank.ee/en/quaterly-reporting-companies>

²⁸ There were no MMFs and pension funds in Estonia in 2021.

²⁹ No adequate data sources are known for BOP compilation.

³⁰ Values are expected to be negligible.

	Receivable	Payable
Net reinvested earnings on foreign direct investment received - paid from/to the ROW	-579.9	
<i>% of Current Account</i>	<i>50.4</i>	
<i>% of GNI</i>	<i>-1.9</i>	

Data sources

The data on the direct investment flows, positions and profit of financial and non-financial FDI enterprises are collected directly by Eesti Pank. Additional estimations are done by the same institution. Eesti Pank does not have a separate enterprise register for FDI purposes; all the resident units of interest are included in one inter-agency Business Register for BOP purposes (BOP survey system). The estimation of reinvested earnings is based on the data sources outlined in the following table.

Table 8.9 Reinvested earnings on foreign direct investment by data sources, 2021 (million euros)

	Receivable	Payable
Reinvested earnings on foreign direct investment	196.7	776.5
S.11 Non-financial corporations	97.0	764.5
A. Survey of manufacturing or non-financial services companies (Form E)	76.4	412.9
B. Survey of transportation companies (Form T)	10.1	20.3
Combined data from K. Estonian Securities Register (Nasdaq), L. Business Register of Estonia and M. Tax and Customs Board		285.9
Z. Estimations	10.6	45.4
S.12 Financial corporations	99.6	12
A. Survey of manufacturing or non-financial services companies (Form E)	9.3	-56.6
C. Survey of insurance companies (Form K)	11.8	5
D. Statistical survey of credit institutions	77.2	62.2
Combined data from K. Estonian Securities Register (Nasdaq), L. Business Register of Estonia and M. Tax and Customs Board		-4.5
Z. Estimations	1.3	5.9

A detailed description of the data sources for estimating reinvested earnings on foreign direct investment is provided in the box below.

	Receivable	Payable
A. Survey of manufacturing or non-financial services companies (Form E)		
	The survey form provides the following information: the amount of dividends announced during the reference period and the quarterly gains/losses of subsidiaries, related companies or branches. If the direct investment enterprise provides consolidated financial statements, it is asked to report its consolidated profit/loss in order to cover the entire group. In a separate column, it is asked to record the amount of realised and unrealised revenues/expenditures derived from the change in the value of assets and liabilities; exchange rate gains/losses, losses from the revaluation of receivables, receipt of write-offs	If the enterprise is obliged to fill in the survey form, the RIE payable is calculated very similarly to the RIE receivable. All the necessary components are provided by respondents. The main difference is that, on the equity side, it is asked to record full amounts of dividends, profit/loss and realised and unrealised gains/losses. The distribution of RIE (or dividends payable) is calculated by Eesti Pank from the percentage of voting power of each non-resident owner. Data for most of the enterprises are validated at the individual level. Information on the imputation of missing data, adjustments and revisions is available in Chapter 10.4.

	Receivable	Payable
	receivable and gains/losses from the revaluation and sales of real estate and financial assets. RIE is the profit/loss of the period minus dividends announced minus holding gains and losses. Data for most of the enterprises are validated at the individual level. Information on the imputation of missing data, adjustments and revisions is given in Chapter 10.4.	
B. Survey of transportation companies (Form T)		
	The same procedure as above	The same procedure as above
C. Survey of insurance companies (Form K)		
	The same procedure as above	The same procedure as above
D. Statistical survey of credit institutions		
	RIE receivable is calculated using the balance sheet information and income statements of the subsidiaries and associates abroad.	Credit institutions' report on balance sheet (owner's equity items). RIE payable is calculated based on detailed income statements reported quarterly.
Combined data from K. Estonian Securities Register (Nasdaq), L. Business Register of Estonia and M. Tax and Customs Board		
	N/A	In order to cover the entire population of foreign direct investment enterprises in Estonia, the annual reports and balance sheets provided to the Business Register of Estonia and distributed income of corporations reported to the Tax and Customs Board are used. The following formula was used for estimating RIE under the COPC principle: - Net profit/loss for the financial year - Total financial income and expenses - Dividends payable + Dividend income receivable - Interest expense + Interest income - Profit from the sale of real estate investment property, plant, property and equipment, or intangible assets; profit from the fair value change of real estate investment property and biological assets; profit from exchange rate differences + Loss from the sale of real estate investment property, plant, property and equipment, or intangible assets; loss from fair value change of biological assets and real estate investment property; loss from exchange rate differences. The estimations were made at the single enterprise level and the ownership ratio is applied in order to derive the amount due to non-resident direct investors. The disadvantage of the data source is that there are no consolidated profit and loss accounts in the database.
Z. Estimation		
	Estimates of the adjustment to reinvested earnings on foreign direct investment (RIE on FDI) have been made to account for the capitalisation of own-account produced intellectual property. The input data for these estimates are sourced from national	Estimates of the adjustment to reinvested earnings on foreign direct investment (RIE on FDI) have been made to account for the capitalisation of own-account produced intellectual property. The input data for these estimates are sourced from national

	Receivable	Payable
	accounts statistics and the International Investment Position. For more detailed information, please refer to the “Recent Methodological Developments and Future Tasks” section below.	accounts statistics and the International Investment Position. For more detailed information, please refer to the “Recent Methodological Developments and Future Tasks” section below.

In order to capture all the transactions (and positions) between related parties, the items on the survey forms are divided into four groups, mostly according to the nature of the counterparty: direct investors, direct investment enterprises, fellow enterprises and non-resident third parties.

Methods used

Since 2010, the recording of RIE has been fully consistent with international guidelines, which recommend the use of the Current Operating Performance Concept (COPC). According to the COPC, direct investment earnings consist of income from normal enterprise operations before non-recurring items (write-offs), and capital gains and losses are taken into account. In accordance with the COPC, interest receivable/payable and dividend receivable are included. To ensure consistency with ESA 2010 standards, the necessary conceptual adjustments were applied at the macroeconomic level – specifically, the capitalisation of intellectual property products created for own use, such as research and development (R&D), mineral exploration, software, and original works.

Reinvested earnings were recorded when they were earned.

There is no evidence of transfer pricing, and correspondingly, there are no adjustments of reinvested earnings to/from the rest of the world.

Recent methodological developments and future tasks

Estonia has reviewed the sources and methods used in compiling reinvested earnings on foreign direct investment (RIE on FDI) to ensure alignment with the ESA 2010 framework, where applicable. This review places particular emphasis on the capitalisation of intellectual property products – such as research and development (R&D), mineral exploration, software, and original works – when compiling RIE estimates.

Previous situation: when calculating reinvested earnings (RIE) received from and paid to the Rest of the World, Estonia used the Current Operating Performance Concept (COPC) as an approximation for the Net Operating Surplus (NOS) concept. For the estimation of RIE according to the COPC, survey data and individual enterprise data available in the annual bookkeeping accounts were used.

For the assessment of potential over- or underestimation of GNI, two institutional sectors were addressed: non-financial corporations and financial corporations.

Reinvested earnings (RIE) payable

Research and development (AN.1171)

Input data used:

- Enterprise level data on capitalisation of own-account produced ($P.12$) R&D (annual, time series 2010–2018);
- List of legal units with foreign direct investor(s) and its/their ownership share in the legal units concerned as at 31 December, time series 2010–2018;
- Gross fixed capital formation ($P.51g$) of AN.1171 at NACE Rev. 2 division or group of divisions level (annual, time series 2001–2018);
- Capitalisation of own-account produced ($P.12$) R&D at NACE Rev. 2 division or group of divisions level (annual, time series 2001–2018);
- Consumption of fixed capital ($P.51c$) of AN.1171 at NACE Rev. 2 division or group of divisions level (annual, time series 2010–2018)

Data processing and calculations:

- Microdata linking: the list of legal units with foreign direct investor(s) is linked to the enterprise level data on capitalisation of own-account produced ($P.12$) R&D and multiplied by the direct investors' share in the legal unit concerned. The result is considered as the amount representing the underestimation of RIE payable – $P.12_{RIE}$.
- In order to tackle potential overestimation of RIE payable (aka consumption of FDI related capitalised own-account produced R&D), the following calculations are done at NACE Rev. 2 division or group of divisions level:
 - $\sum_{i=n-(l-1)}^n P.51g_i$ – gross fixed capital formation in R&D assets in the year of observation and the preceding nine years (where $P.51g_i$ – gross fixed capital formation in R&D assets in year i ; n – year of observation; l – lifespan of the asset). As the lifespan of R&D is calculated at 10 years in the Estonian national accounts including the year of acquisition of the asset, the division of depreciation between fixed assets purchased from the market and those produced in house is based on the total value over 10 years.
 - $\sum_{i=n-(l-1)}^n P.12_i$ – R&D output produced for own final use in the year of observation and the preceding nine years.
 - $P.12c = \frac{\sum_{i=n-(l-1)}^n P.12_i}{\sum_{i=n-(l-1)}^n P.51_i} \times P.51c$ – estimate of the consumption of fixed capital of R&D output produced for own final use (where $P.12_i$ – R&D output for own final use in year i ; n – year of observation; l – lifespan of the asset).
 - $P.12c_{RIE} = \frac{P.12_{RIE}}{P.12} \times P.12c$ – estimate of the consumption of fixed capital of R&D output produced for own final use related to the reinvested earnings (potential overestimation of RIE payable).
- Impact on RIE payable is estimated as $P.12_{RIE} - P.12c_{RIE}$, the results are presented in Table 8.10.

Mineral exploration and evaluation (AN.1172)

Input data used:

- List of companies involved in mineral exploration and evaluation, time series 2010–2015;
- List of legal units with foreign direct investor(s) and its/their ownership share in the legal units concerned as at 31 December, time series 2010–2018.

Data processing and calculations:

- Microdata linking: the list of legal units with foreign direct investor(s) is linked to the list of companies involved in mineral exploration and evaluation. The outcome indicated that none of them had a foreign direct investor in the time period 2010–2018, and mineral exploration and evaluation had no impact on RIE payable.

Computer software and databases (AN.1173)

Input data used:

- Enterprise level data on wages and salaries (the main component for estimation of own-account software) with the indication of sector and activity of the enterprise for years 2010, 2014 and 2018.
- List of legal units with foreign direct investor(s) and its/their ownership share in the legal units concerned as at 31 December, time series 2010–2018;
- Gross fixed capital formation (*P.51g*) of AN.1173 at NACE Rev. 2 division or group of divisions level (annual, time series 2006–2018);
- Capitalisation of own-account produced (*P.12*) software at NACE Rev. 2 division or group of divisions level (annual, time series 2006–2018);
- Consumption of fixed capital (*P.51c*) of AN.1173 at NACE Rev. 2 division or group of divisions level (annual, time series 2010–2018).

Data processing and calculations:

- Microdata linking: the list of legal units with foreign direct investor(s) is linked to the enterprise level data on wages and salaries and the amounts of wages and salaries are multiplied by the direct investors' share in the legal unit concerned.
For years 2011–2013, enterprise level data of the year 2010 are used as a proxy and linked to the list of legal units owned by foreign direct investors of the reference year (2011–2013). For years 2015–2017, enterprise level data of the year 2014 are used as a proxy and linked to the list of legal units owned by foreign direct investors of the reference year (2015–2017).
- For the estimation of foreign direct investors' share in the creation of own-account software
 - Wages and salaries paid by the enterprise and wages and salaries attributed to the foreign direct investments are aggregated at the same level as the input data on capitalisation of own-account produced (*P.12*) software (i.e. NACE Rev. 2 activity at division or group of divisions level).
 - $$P.12_{RIE} = \frac{\text{Aggregated wages and salaries attributed to DI}}{\text{Aggregated wages and salaries of enterprises}} \times P.12$$
 – amount representing the underestimation of RIE payable.
- The treatment of potential overestimation of RIE payable (aka consumption of FDI related capitalised own-account produced software) is done the same way as described above for Research and development (AN.1171). The only difference is that the lifespan of software is calculated at 5 years.
- Impact on RIE payable is estimated as $P.12_{RIE} - P.12_{CRIE}$, the results are presented in Table 8.10.

Entertainment, literary or artistic originals (AN.1174)

Input data used:

- Gross fixed capital formation (*P.51g*) of AN.1174 at NACE Rev. 2 division or group of divisions level (annual, time series 2006–2018);
- International investment position of direct investment equity in Estonia (DIRE equity) at NACE Rev. 2 division or group of divisions level as at 31 December, time series 2010–2018;
- Own funds at book value of all Estonian enterprises (OFBV) at NACE Rev. 2 division or group of divisions level as at 31 December, time series 2010–2018;
- Consumption of fixed capital (*P.51c*) of AN.1174 at NACE Rev. 2 division or group of divisions level (annual, time series 2010–2018).

Data processing and calculations:

- Microdata linking was not an option for the estimation of foreign direct investors' share in the creation of entertainment, literary or artistic originals. Taking into account that the subjects of assessment are corporations, the following approach was implemented:

$$P.12 = P.51g$$

$$P.12_{RIE} = \frac{DIRE\ equity}{OFBV} \times P.12 - \text{amount representing the underestimation of RIE payable.}$$
- The treatment of potential overestimation of RIE payable (aka consumption of FDI related entertainment, literary and artistic originals) is done the same way as described above for Research and development (AN.1171). The only difference is that the lifespan of entertainment, literary or artistic originals is calculated at 5 years.
- Impact on RIE payable is estimated as $P.12_{RIE} - P.12_{C_{RIE}}$, the results are presented in Table 8.10.

Table 8.10 Impact of own-account produced intellectual property on cross-border flows of RIE payable on FDI by asset type, unadjusted (million euros)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Research and development	7.1	8.5	12.5	4.1	3.9	10.7	11.4	9.4	10.6
Mineral exploration and evaluation	-	-	-	-	-	-	-	-	-
Computer software and databases for own use	2.2	4.7	1.4	4.0	11.4	9.1	11.5	15.3	26.7
Entertainment, literary or artistic originals	-0.6	1.2	-0.8	-0.2	-0.5	0.1	0.6	0.2	0.7
Total	8.7	14.4	13.2	7.8	14.9	19.9	23.6	24.9	38.0

Adjustment of the impact of own-account produced intellectual property

Estonian GAAP allows the capitalisation of own-account produced intellectual property.

In order to assess amounts already considered in RIE (calculated according to the COPC), the following steps were taken:

Input data used:

- Enterprise level data on the item “Kapitaliseeritud väljaminekud oma tarbeks põhivarade valmistamisel”³¹ extracted from the dataset of annual bookkeeping accounts (annual, time series 2010–2018);

³¹ Unofficial translation: “Capitalised costs of the production of fixed assets for own use”

- List of legal units with foreign direct investor(s) and its/their ownership share in the legal units concerned as at 31 December, time series 2010–2018;
- List of enterprises engaged in the production of own-account intellectual property (combined list of enterprise level data used as input in previous sub-chapters; annual, time series 2010–2018).
- Previously estimated foreign direct investors' share of capitalisation of own-account produced intellectual property ($P.I2_{RIE}$) at sector level, annual.

Data processing and calculations:

- Microdata linking: the list of legal units with foreign direct investor(s) is linked to the enterprise level data on capitalisation of own-account produced fixed assets, and the reported amounts are multiplied by the direct investors' share in the legal unit concerned. In order to distinguish capitalised own-account produced intellectual property, the list of enterprises engaged in that kind of activity is linked. The results are presented in Table 8.11.

Table 8.11. Capitalised costs of the production of own-account produced intellectual property related to foreign direct investments in Estonia in bookkeeping accounts by sector (million euros)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
S.11	0.7	1.8	3.0	2.1	4.0	4.3	6.7	3.3	9.0
S.12					-0.3				0.0

- Data validation: Validation is undertaken because an approximation was used in order to separate own-account produced intangible fixed assets from tangible fixed assets, and the dataset of annual bookkeeping accounts is not designed to accommodate accounts of credit institutions, insurance corporations and branches.

For data validation, the annual bookkeeping accounts of the ten biggest (according to the national accounts) producers of own account software in 2018 were checked. There were six non-financial (S.11) and four financial corporations (S.12); all enterprises concerned are 100% foreign-owned (foreign direct investments).

Regarding the non-financial corporations, an amount of 7.3 million euros was recorded in the annual bookkeeping accounts, verified at enterprise level and proved as the capitalised development costs of software.

Regarding the financial corporations: there were two credit institutions and two branches, none of them were in the dataset of annual bookkeeping accounts and all of them claimed that own-account produced software is capitalised. In the case of the credit institutions, there was no evidence of that (the changes in intangible assets did not support the statement). In the case of the branches, there was solid evidence that own-account produced software was capitalised. The amount attributable to the Estonian branches (estimated on the basis of personnel cost) totalled 3.6 million euros and was added to the 0.03 million euros, derived from the dataset of annual bookkeeping accounts, for the estimation of the adjustment ratio in 2018.

- The estimation of the adjustment ratios (r) is shown in Table 8.12 and the amount of adjusted impact on RIE payable in Table 8.13.

Table 8.12 Capitalised costs of the production of own-account produced intellectual property related to foreign direct investments in Estonia in bookkeeping and national accounts by sector (million euros)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Non-financial corporations									
Bookkeeping accounts (BA)	0.7	1.8	3.0	2.1	4.0	4.3	6.7	3.3	9.0
National accounts (NA)	33.4	45.1	53.3	49.2	68.5	79.3	87.0	83.7	105.6
<i>Adjustment ratio: $1 - BA \div NA$</i>	<i>0.98</i>	<i>0.96</i>	<i>0.94</i>	<i>0.96</i>	<i>0.94</i>	<i>0.95</i>	<i>0.92</i>	<i>0.96</i>	<i>0.91</i>
Financial corporations									
Bookkeeping accounts (BA)					-0.3				3.7
National accounts (NA)	11.5	11.5	10.7	14.0	16.5	19.1	21.5	24.1	25.6
<i>Adjustment ratio: $1 - BA \div NA$</i>	<i>1.00</i>	<i>1.00</i>	<i>1.00</i>	<i>1.00</i>	<i>1.02</i>	<i>1.00</i>	<i>1.00</i>	<i>1.00</i>	<i>0.86</i>

Reinvested earnings (RIE) receivable Intellectual property products (AN.117)

For Estonian affiliates abroad, no data exist on their expenditure and investments in intellectual property products. Therefore, to estimate under- or overestimation of RIE receivable, a more pragmatic solution has been used.

Input data used:

- International investment position of direct investment equity in Estonia (DIRE equity) by institutional sector as at 31 December, time series 2010–2018;
- International investment position of direct investment equity abroad (DIA equity) by institutional sector as at 31 December, time series 2010–2018;
- Previously estimated net impact on RIE payable;
- Previously estimated adjustment ratio.

Data processing and calculations:

- $\frac{DIA\ equity}{DIRE\ equity} \times r \times (P.12_{RIE} - P.12_{CRIE})$ – amount representing the over- or underestimation of RIE receivable (where *DIA equity* – international investment position of direct investment equity abroad; *DIRE equity* – international investment position of direct investment equity in Estonia; *r* – adjustment ratio; *P.12_{RIE}* - *P.12_{CRIE}* – impact on RIE payable). The impact on cross-border flows of RIE on FDI receivable is shown in Table 8.13.

Table 8.13 Impact on gross national income (GNI), 2010–2018
(million euros)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Adjustment to RIE received	2.7	3.0	2.9	1.6	3.0	4.7	5.9	6.2	9.7
Adjustment to RIE paid	8.6	14.0	12.5	7.6	14.2	19.0	22.0	24.1	35.2
Impact on GNI	-6.0	-11.0	-9.6	-6.0	-11.3	-14.3	-16.1	-17.9	-25.5
GNI	13,949.2	15,890.1	17,343.8	18,705.1	19,813.6	20,565.7	21,726.5	23,753.4	25,902.6
Adjustment as % of GNI	-0.04	-0.07	-0.06	-0.03	-0.06	-0.07	-0.07	-0.08	-0.10

Estimations

Estonia will continue calculating RIE on FDI based on an enterprise's individual data (measured by COPC) and apply the necessary conceptual adjustments at macro level in order to align the final estimate of RIE on FDI with ESA 2010 standards.

The impact of reinvested earnings on foreign direct investment, as calculated above, is relatively small, and the estimates are largely based on assumptions. For several reasons, especially those previously mentioned, adjustments begin with the reference year 2018, with a simplified methodology applied.

Comprehensive calculations are conducted every four years (referred to as benchmark years), contingent on the availability of data from all relevant sources. These calculations can only be finalised at least two years after the benchmark year; for instance, calculations for 2022 can be completed no earlier than 2025. For the 2021 reference year, data from 2018 serve as the benchmark.

Adjustments for the intervening years – as well as preliminary adjustments for the reference year – are estimated based on the ratio of adjustment to the direct investment equity stock at the beginning of the reference quarter. Ratios are calculated, and estimations are carried out separately for reinvested earnings (RIE) of inward non-financial corporations (RIE payable), inward financial corporations (RIE payable), outward non-financial corporations (RIE receivable), and outward financial corporations (RIE receivable).

Input data and ratio calculation (benchmark year: 2018)

The following data pertain to the benchmark year 2018 and are used for calculating the ratios related to the adjustment of reinvested earnings (RIE):

Adjustment of RIE receivable from:

- Non-financial corporations abroad: 9.2
- Financial sector abroad: 0.5

Total adjustment to RIE receivable: 9.7 (consistent with the amount presented in Table 8.13)

Equity stock (direct investment asset) at the beginning of 2018:

- Non-financial corporations abroad: 3,681.0
- Financial sector abroad: 954.8

Adjustment of RIE payable by:

- Non-financial corporations (S11): 31.6
- Financial sector (S12): 3.7

Total adjustment to RIE payable: 35.2 (consistent with the amount presented in Table 8.13)

Equity stock (direct investment liability) at the beginning of 2018:

- Non-financial corporations (S11): 13,264.2
- Financial sector (S12): 5,394.2

Ratios (benchmark year: 2018):

- Non-financial corporations abroad:
Adjustment of RIE receivable / Equity stock = $9.2 \div 3,681.0 \approx 0.00250$
- Financial sector abroad:
Adjustment of RIE payable / Equity stock = $0.5 \div 954.8 \approx 0.00052$
- Non-financial corporations (S11):
Adjustment of RIE payable / Equity stock = $31.6 \div 13,264.2 \approx 0.00238$
- Financial sector (S12):
Adjustment of RIE payable / Equity stock = $3.7 \div 5,394.2 \approx 0.00069$

For 2021, the RIE related to capitalisation of intellectual property products for own use receivable from non-resident non-financial corporations from the ROW is (rough estimation) $0.00250 \times 4,081.6 \approx 10.2$ million euros. The actual annual amount was 10.1 million euros (the sum of quarterly estimations). A similar approach is applied in order to estimate the adjustment of the RIE receivable from the non-resident financial sector: $0.00052 \times 2,183.8 \approx 1.1$ million euros; and the actual annual amount was 1.3 million euros in 2021.

For 2021, the RIE related to capitalisation of intellectual property products for own use payable by resident non-financial corporations to the ROW is (rough estimation) $0.00238 \times 17,365.2 \approx 41.3$ million euros. The actual annual amount was 45.4 million euros (the sum of quarterly estimations). The adjustment of the RIE payable by the resident financial sector: $0.00069 \times 7,414.9 \approx 5.1$ million euros; and the actual annual amount was 5.9 million euros in 2021.

The distribution of these amounts across sectors is shown in Table 8.9, row “Z. Estimations.”

Future tasks: no other methodological developments are foreseen in the near future.

8.4.4. Other investment income

8.4.4.1. Investment income attributable to insurance policy holders

Next, a table is provided showing investment income attributable to insurance policy holders in 2021.

Table 8.14 Investment income attributable to insurance policy holders, 2021
(million euros)

	Paid to the rest of the world	Received from the rest of the world
Investment income attributable to insurance policy holders	1.4	0.7

Investment income attributable to insurance policy holders is the net property income received from the investment of insurance technical reserves held in financial assets, land and buildings. Technical reserves are the assets of policyholders.

Property income attributed to insurance policy holders mainly concerns cases where non-resident insurance companies provide insurance services to Estonian legal persons (including insurance companies) and private individuals.

Data sources

The required transactions are covered by the data sources indicated in the box below:

	Receivable	Payable
Financial corporations sector: insurance companies		
Data sources	ITSS (International Trade in Services by Statistics Estonia)	ITSS (International Trade in Services by Statistics Estonia)
Other sectors		
Data sources	ITSS, the survey of credit institutions, the Public Sector Financial Statements System, and the International Transactions Reporting System.	N/A

Methods

Property income attributed to insurance policy holders paid to the ROW

Receipts of non-resident property income are shown as being paid to non-residents by resident insurance companies. The income is subsequently treated as being paid back to the insurance enterprises in the form of premiums and contribution supplements in addition to the actual premiums and contributions payable.

Since 2013, non-resident flows have been estimated using the ratio of total insurance sector premium supplements to premiums from the previous year. These ratios are regularly analysed and monitored to ensure reliability. For 2021 ratios, 2020 information was used. The estimated amounts are quite small, amounting to 1.4 million euros annually. For periods before 2013, no estimations have been made.

Property income attributed to insurance policy holders received from the ROW

Receipts of Estonian resident property income are shown as being paid to Estonian residents by non-resident insurance companies. The income is subsequently treated as being paid back to the non-resident insurance enterprises in the form of premiums and contribution supplements in addition to the actual premiums and contributions payable.

Since 2013, non-resident flows have been estimated using the ratio of total Estonian insurance sector premium supplements to premiums for insurance companies (for reinsurance) from the previous year and international practices for other units. These ratios are regularly analysed and monitored to ensure reliability. In 2021, we used 2020 data for reinsurance. The estimated amounts are marginal, amounting to 0.7 million euros in 2021. For periods before 2013, no estimations have been made.

Next, example 8.1 demonstrates how the consistency of property income attributed to insurance policy holders with the premium supplements in exports of insurance is ensured. In Estonia, the consistency of property income attributed to insurance policy holders with the premium supplements in imports of insurance is also ensured.

Example 8.1. Estonian insurance companies reported in ITSS that they have received 2.4 million euros of life insurance premiums and 15.5 million euros of non-life insurance premiums from non-residents in 2021. Balance of payment compilers have information about the total premiums, premium supplements, output (= services) etc. of the whole life and non-life insurance sector in 2020, compiled by Statistics Estonia. On the basis of the total insurance sector data, we estimated the following ratios: premiums to output 0.78 and premium supplements to premiums 0.15 for life insurance, premiums to output 0.45 and premium supplements to premiums 0.07 for non-life insurance. Using the ratios, we estimated the insurance services export and investment income attributable to insurance policy holders.

Table 8.15 Cross-border flows of investment income attributable to insurance policy holders, 2021
(million euros)

	Total premiums from non- residents, form K	Service coefficient	Investment income coefficient	Insurance services (credit)	Investment income (debit)
Life insurance	2.4	0.78	0.15	1.8	0.4
Non-life insurance	15.5	0.45	0.07	7.0	1.1
Total	17.9			8.8	1.4

8.4.4.2. Investment income payable on pension entitlements

With the pension reform in 2021, the II Pillar pension schemes became voluntary. Based on the ESA 2010 methodology, II Pillar pension funds do not belong to social insurance schemes since 2021 and contributions into the II Pillar funds are recorded as purchases of the shares of mutual investment funds. So, there is no investment income payable on pension entitlements due to the non-existing sector.

Questions on cross-border pensions of resident households were included in the Household Finance and Consumption Survey in 2021. The number of persons who had cross-border pension rights with account balance was insignificant.

We continuously investigate foreign pensions, and if the phenomenon becomes more significant, we plan to incorporate the results into foreign statistics.

Due to the marginal importance of the item, the investment income payable on pension entitlements is not estimated. No immediate development is foreseen in this area.

Data sources

The data sources for the compilation of investment income payable on pension entitlements are as follows:

	Receivable	Payable
Financial corporations sector: Pension funds		
Data sources	N/A	Not existing
Other sectors		
Data sources	N/A	N/A

8.4.4.3. Investment income attributable to collective investment fund shareholders

Income attributable to domestic shareholders (credit) is compiled using the amounts of dividend payments per share before tax, available from the Centralised Securities Database. Retained earnings are taken from the same database, using a daily security specific income factor, which is based on accruals and follows the debtor approach.

Income attributable to foreign shareholders (debit) is found from the reports of investment funds and the Central Register of Securities. In 2021, dividend payments to non-residents amounted to 21.7 million euros. Retained earnings are derived using the daily security specific income factors that are based on the average income factors of the corresponding euro-area investment funds in the Centralised Securities Database.

8.4.4.4. Rent on land and sub-soil assets

Rents on land and sub-soil assets are treated and recorded as property income exchanged with the rest of the world. These transactions can occur if a non-resident is renting land either for non-production purposes or for production lasting less than one year. It is considered that rent on land and sub-soil assets is of minor significance as far as Estonia is concerned.

Data sources

The data sources for the compilation of rent on land and sub-soil assets are as follows:

	Receivable	Payable
Government sector		
Data sources	PSFS database	
Other sectors		
Data sources		The ITRS

Rents on land and sub-soil assets payable to the ROW – the rent paid abroad by residents is currently considered as insignificant. In principle, transactions above the ITRS threshold could be covered by that system.

Rents on land and sub-soil assets receivable from the ROW – the rent receivable on land and sub-soil assets is recorded in the PSFS database. No international transactions by public sector financial statements have been identified yet.

Chapter 9. Main classifications used

9.1. Classifications used for the production approach

The main classification schemes used in the integrated SUT for the estimation of GDP according to the production approach are the activity classification, which is consistent with NACE Rev. 2 (see Section 9.1.1), and the product classification, which is consistent with CPA 2008 version (Section 9.1.2). The two classifications are quite detailed: there are 160 activities (see Table 9.2) and 261 products (Table 9.3), which also determine the format size of the integrated SUT. The breakdown of activities by type of producer – market, own final use, and other non-market – is illustrated separately in Table 9.1. There are 131 activities of market producers specified, 6 activities for own final use and 23 other non-market activities, adding up to 160 specified activities, which are also distinguished by institutional sectors.

Between 2013 and 2016, three new activities in the general government (GG) sector were introduced due to the reclassification of units from institutional sector S.11 into the GG sector S.13: Passenger rail transport, interurban (N.H.491); Urban and suburban passenger land transport (N.H.4931); and Water transport (N.H.50). There were no changes due to reclassification between 2016 and 2021.

9.1.1. Activity classification

The activity classification used in national accounts is based on the Estonian Classification of Economic Activities (*Eesti majanduse tegevusalade klassifikaator – EMTAK 2008*), which is consistent with the Statistical Classification of Economic Activities in the European Community (NACE Rev. 2) at the 4-digit level.

In the production approach, altogether 160 activities are distinguished when broken down by institutional sector and by type of producer. The consolidated number of activities (without 4 illegal activities introduced in NA) is 73. The full details of activity specifications are given in Table 9.1. Below is an illustration of the sectoral breakdown into activities, cross-classified by type of producer.

Non-financial corporations (code M in the activity classification), households as market producers (code H) and financial corporations (code F) are classified as market producers. Government budgetary institutions (code N) and NPISH (code S) are other non-market producers. The activity classification includes households as producers for own final use (housing services produced by owner-occupiers; agricultural, fishing and forestry production for own final use; own-account construction of dwellings; activities of households as employers of domestic staff – code O). There are 131 market activities specified, 23 other non-market activities and 6 activities for own final use.

Table 0.1 Overview of the activities by institutional sector and by type of producer

Institutional sector	Total	Type of producer		
		Market activities (M, F, H, E)	Other non-market activities (N, S)	Activities for own final use (O)
Total number of activities	160	131	23	6
- Non-financial corporations (M, E)	66	66		
of which: illegal activities (E)	2	2		
- Financial corporations (F)	3	3		
- General government (N)	17		17	
- NPISH (S)	6		6	
- Households (H, O, E)	68	62		6
of which: illegal activities (E)	2	2		
Number of activities - consolidated	73	68	3	2

The full list of activities (the unconsolidated list of 160 activities) used in the production approach is presented in Table 0.2.

Table 0.2 Activity classification used

Code	Activity	NACE Rev. 2
<i>M, H</i>	<i>Non-financial corporations (M) and households as market producers (H)</i>	
M.A.01, H.A.01	Crop and animal production, hunting and related service activities	01
M.A.02, H.A.02	Forestry and logging	02
M.A.03, H.A.03	Fishing and aquaculture	03
M.B.05_09, H.B.05_09	Mining and quarrying	05–09
M.C.10_11, H.C.10_11	Manufacture of food products and beverages	10–11
M.C.13_15, H.C.13_15	Manufacture of textiles, wearing apparel and leather products	13–15
M.C.16, H.C.16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	16
M.C.17, H.C.17	Manufacture of paper and paper products	17
M.C.18, H.C.18	Printing and reproduction of recorded media	18
M.C.19	Manufacture of coke and refined petroleum products	19
M.C.20, H.C.20	Manufacture of chemicals and chemical products	20
M.C.21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	21
M.C.22, H.C.22	Manufacture of rubber and plastic products	22
M.C.23, H.C.23	Manufacture of other non-metallic mineral products	23
M.C.24, H.C.24	Manufacture of basic metals	24
M.C.25, H.C.25	Manufacture of fabricated metal products, except machinery and equipment	25
M.C.26, H.C.26	Manufacture of computer, electronic and optical products	26
M.C.27	Manufacture of electrical equipment	27
M.C.28, H.C.28	Manufacture of machinery and equipment n.e.c.	28

Code	Activity	NACE Rev. 2
M.C.29, H.C.29	Manufacture of motor vehicles, trailers and semi-trailers	29
M.C.30, H.C.30	Manufacture of other transport equipment	30
M.C.31_32, H.C.31_32	Manufacture of furniture; other manufacturing	31–32
M.C.33, H.C.33	Repair and installation of machinery and equipment	33
M.D.351, H.D.351	Electric power generation, transmission and distribution	351
M.D.352	Manufacture of gas; distribution of gaseous fuels through mains	352
M.D.353, H.D.353	Steam and air conditioning supply	353
M.E.36	Water collection, treatment and supply	36
M.E.37_39, H.E.37_39	Sewerage; waste collection, treatment and disposal activities; materials recovery; remediation activities and other waste management services	37–39
M.F.41_43, H.F.41_43	Construction	41–43
M.G.45, H.G.45	Wholesale and retail trade and repair of motor vehicles and motorcycles	45
M.G.46, H.G.46	Wholesale trade, except of motor vehicles and motorcycles	46
M.G.47, H.G.47	Retail trade, except of motor vehicles and motorcycles	47
M.H.491	Passenger rail transport, interurban; freight rail transport	491, 492
M.H.4931, H.H.4931	Other passenger land transport, except taxi operation	493, excl. 4932
M.H.4932, H.H.4932	Taxi operation	4932
M.H.494, H.H.494	Freight transport by road and removal services; transport via pipeline	494–495
M.H.50, H.H.50	Water transport	50
M.H.51	Air transport	51
M.H.52, H.H.52	Warehousing and support activities for transportation	52
M.H.53, H.H.53	Postal and courier activities	53
M.I.55, H.I.55	Accommodation	55
M.I.56, H.I.56	Food and beverage service activities	56
M.J.58, H.J.58	Publishing activities	58
M.J.59_60, H.J.59_60	Motion picture, video and television programme production, sound recording and music publishing activities; programming and broadcasting activities	59–60
M.J.61, H.J.61	Telecommunications	61
M.J.62_63, H.J.62_63	Computer programming, consultancy and related activities; information service activities	62–63
H.K.66	Activities of insurance agents and brokers	66
M.L.68, H.L.68	Real estate activities	68, excl. part of 682, part of 68321; 68322 and part of 68329
H.L.68201C	Rental and operating of own or leased apartments (actual rent)	part of 682
H.L.68201S	Rental and operating of own or leased houses (actual rent)	part of 682
M.M.69_70, H.M.69_70	Legal and accounting activities; activities of head offices; management consultancy activities	69–70
M.M.71, H.M.71	Architectural and engineering activities; technical testing and analysis	71
M.M.72, H.M.72	Scientific research and development	72
M.M.73, H.M.73	Advertising and market research	73

Code	Activity	NACE Rev. 2
M.M.74_75, H.M.74_75	Other professional, scientific and technical activities; veterinary activities	74–75
M.N.77, H.N.77	Rental and leasing activities	77
M.N.78, H.N.78	Employment activities	78
M.N.79, H.N.79	Travel agency, tour operator and other reservation service and related activities	79
M.N.80_82, H.N.80_82	Security and investigation activities; services to buildings and landscape activities; office administrative, office support and other business support activities	80–82
M.P.85, H.P.85	Education	85
M.Q.86, H.Q.86	Human health activities	86
M.Q.87_88, H.Q.87_88	Residential care activities; social work activities without accommodation	87–88
M.R.90_92, H.R.90_92	Creative, arts and entertainment activities; other cultural activities; gambling and betting activities	90–92
M.R.93, H.R.93	Sports activities and amusement and recreation activities	93
M.S.94, H.S.94	Activities of business and employers membership organisations	94, excl. 94111 and 94119
M.S.95, H.S.95	Repair of computers and personal and household goods	95
M.S.96, H.S.96	Other personal service activities	96
F	Financial corporations	
F.K.64	Financial service activities, except insurance and pension funding	64
F.K.65	Insurance, reinsurance and pension funding, except compulsory social security	65
F.K.66	Activities auxiliary to financial services and insurance activities	66
N	General government	
N.H.491	Passenger rail transport, interurban (GG)	491, 492
N.H.4931	Urban and suburban passenger land transport (GG)	493, excl. 4932
N.H.50	Water transport	50
N.H.52	Support activities for transportation	52
N.J.59_60	Television programme production activities; programming and broadcasting activities	59–60
N.J.62_63	Other information technology and computer service activities; information service activities	62–63
N.L.68	Real estate activities	68, excl. 68201
N.M.69_70	Accounting; management consultancy activities	69–70
N.M.71	Architectural and engineering activities; technical testing and analysis	71
N.M.72	Scientific research and development	72
N.O.84	Public administration and defence; compulsory social security	84
N.P.85	Education	85
N.Q.86	Human health activities	86
N.Q.87_88	Residential care activities; social work activities without accommodation	87–88
N.R.90_91	Creative, arts and entertainment activities; libraries, archives, museums and other cultural activities	90–92
N.R.93	Sports activities and amusement and recreation activities	93

Code	Activity	NACE Rev. 2
N.S.96	Other personal service activities	96
S	<i>Non-profit institutions serving households (NPISH)</i>	
S.L.6832	Own house, garage and holiday house associations management n.e.c.	part of 68321, 68322, part of 68329
S.P.85	Education	85
S.Q.87_88	Residential care activities; social work activities without accommodation	87–88
S.R.90_91	Creative, arts and entertainment activities; other cultural activities	90–92
S.R.93	Sports activities and amusement and recreation activities; cultural and civic centres	93
S.S.94	Activities of membership organisations n.e.c. (except agricultural associations and unions)	94, excl. 94111 and 94119
O	<i>Households as producers for own final use</i>	
O.A.02	Production of fuel wood for own final use	02
O.A.03	Fishing for own final use	03
O.F.41	Construction	41–43
O.L.68202C	Rental of own residential houses (imputed rent)	part of 682
O.L.68202S	Rental of own residential apartments (imputed rent)	part of 682
O.T.97_98	Activities of households as employers of domestic personnel; undifferentiated goods- and services-producing activities of private households for own use	97–98
E	<i>Illegal activities</i>	
E.C.20	Production of narcotics	part of 20
E.G.471	Smuggling and illegal trade of alcohol, sugar, tobacco and motor fuels	part of 47
E.G.472	Distribution of narcotics and illegal trade of medicaments	part of 47
E.S.96	Prostitution	part of 96

9.1.2. Product classification

The product classification used in the integrated SUT is based on the Estonian classification of goods and services (*Toodete ja teenuste klassifikaator – TTK*). The latter is consistent with the Statistical Classification of Products by Activity (CPA 2008 version) in the European Economic Community.

This classification is quite detailed: 261 product groups are distinguished. One unspecified item (1.U) is sometimes used at the initial stage of data compilation when it is not possible to classify data completely at the lowest level of detail. The full list of products used in the national accounts is presented in Table 9.3.

Table 0.3 Product classification used

Product code	Product groups, margins and adjustments	CPA 2008
1	Products	
1.A.011A	Cereals	01111–01114, 0112
1.A.011B	Vegetables, fruit, grapes, nuts; beverage crops; spices, not processed	01116–01117, 011182–011183, 011195, 01131–01135, 01138, 01211–01251, 012590, 01253, 012611, 0127, 01281
1.A.011C	Oil seeds, hop and other raw vegetable materials	011181, 01119 (excl. 011195), 011371, 0114–0115, 011939, 012612, 01269, 01282–01283, 01291, 01293
1.A.011D	Straw and forage	01115, 01136, 01191
1.A.011E	Cut flowers, seeds, live plants (except oil seeds, forest tree seeds and forest trees)	011184, 01136, 011372, 01192, 011931, 01252, 01292, 013
1.A.011F	Fibre crops	0116
1.A.011O	Crops, products of gardening and horticulture, produced for own final use	011–012
1.A.0119	Products of agriculture, non-marketable, intra-unit consumed	01
1.A.014A	Live animals and poultry	01411, 0142–1046 (excl. 01422, 01452 and 01453), 01471, 01491
1.A.014B	Raw milk	01412, 01452
1.A.014C	Eggs	01472
1.A.014D	Natural honey, wool, raw skins and other animal products	01422, 01453, 01492–01493
1.A.014O	Live animals and animal products, produced for own final use	014
1.A.016	Agricultural and animal husbandry services (except veterinary services)	01611–01641
1.A.021	Forest trees	02103
1.A.0211	Net growth of forest	02103
1.A.022	Wood in the rough, except fuel wood; forest tree seeds and plants; support services to forestry	02, excl. 02103, 022014 and 02304
1.A.023	Wild growing edible products	02304
1.A.024	Fuel wood	022014
1.A.024O	Fuel wood, produced for own final use	022014
1.A.03	Fish and other fishing products; aquaculture products; support services to fishing	03
1.A.03O	Fish, caught for own final use	03
1.B.05	Coal	05
1.B.061	Petroleum oils	06101
1.B.062	Natural gas	062
1.B.063	Oil shale	06102
1.B.07	Metal ores	07
1.B.081	Other mining and quarrying products, except peat	08, excl. 089210
1.B.089	Peat	089210
1.B.09	Mining support services	09

Product code	Product groups, margins and adjustments	CPA 2008
1.B.0999	Own account mineral exploration	09*
1.C.10	Food products	10
1.C.108	Sugar, illegal	1081
1.C.111	Alcoholic beverages	1101–1105, excl. 11052
1.C.112	Malt	11052, 1106
1.C.113	Soft drinks; mineral waters and other bottled waters	1107
1.C.118	Distilled alcoholic beverages, illegal	1101
1.C.121	Tobacco products	12
1.C.128	Tobacco products, illegal	12*
1.C.131	Textile yarn and thread, woven textiles, non-wovens; knitted and crocheted fabrics, imitation fur manufactured by weaving; narrow woven fabrics, tulles, lace; textile finishing services	131–133, 1391, 139510–139915, 139617
1.C.132	Made-up textile articles, carpets and rugs, cordage, rope, netting and other textiles	1392–1394, 139616, 139919, 139999
1.C.14	Wearing apparel	14
1.C.1511	Leather and fur, parts of footwear of leather	1511, 15204
1.C.1512	Luggage, handbags and the like, saddlery and harness	1512
1.C.152	Footwear	152, excl. 15204
1.C.1611	Wood, sawn and planed; builders' joinery and carpentry, of wood; parquet panels; services auxiliary to wood processing	161 (excl. 161022–161023), 1622, 1623
1.C.1612	Wood wool; wood flour, wood in chips or particles	161022, 161023
1.C.162	Plywood, veneer sheets and wood-based panels; densified wood	1621
1.C.163	Wooden containers	1624
1.C.164	Wooden tableware and kitchenware, ornaments, photo frames; articles of cork, straw or other plaiting materials; other products of wood	1629
1.C.171	Pulp, paper and paperboard	171
1.C.172	Containers of paper and paperboard; wallpaper, other articles of paper and paperboard	1721, 1724, 1729
1.C.173	Household and toilet paper, sanitary goods and toilet requisites, dishes and the like, of paper and paperboard; paper stationery	1722, 1723
1.C.18	Printing and recording services	18
1.C.19101	Coke oven products, mineral tars, petroleum jelly, paraffin wax, petroleum coke, bitumen	1910, 19204, part of 19209
1.C.19201	Briquettes, ovoids and similar solid fuels	19201, part of 19209
1.C.192021	Motor spirit, except aviation spirit	part of 192021
1.C.1920218	Motor fuel, illegal	19202*
1.C.192022	Diesel fuel, kerosene, aviation spirit, other fuel oil and gas (except oil-shale fuel); lubricating petroleum oils	part of 192021; 192022–192027, part of 192028
1.C.192028	Oil-shale fuel and gas, except oil-shale bitumen	part of 192028
1.C.19203	Propane and butane, liquefied; other petroleum gases	19203
1.C.2011	Industrial gases, dyes and pigments, metalloids, and other inorganic basic chemicals; hydrocarbons, ethers, enzymes and other organic chemicals; plastics and synthetic rubber in primary forms	2011, 2012, (excl. 2012*), 2013 (excl. 2013*), 201411–201473, 201480–201499, 20412, 2016, 2017
1.C.2013	Fluorides; rare earth metals, their inorganic and organic compounds; other metal oxides, hydroxides and peroxides	2012* (CN), 2013* (CN)

Product code	Product groups, margins and adjustments	CPA 2008
1.C.2014	Undenatured ethyl alcohol of alcoholic strength by volume of $\geq$ 80%, denatured spirits, essential oils and mixtures of odoriferous substances	201474, 201475, 2053
1.C.202	Fertilisers, mineral or chemical; animal or vegetable fertilisers; agrochemical products, disinfectants	2015, 2020
1.C.203	Paints, varnishes and similar coatings, printing ink and mastics	203
1.C.2041	Detergents, cleaning and polishing preparations	2041, excl. 20411 and 20412
1.C.2042	Perfumes and toilet preparations, bath salt, dental floss	2042
1.C.2051	Explosives, matches and fireworks	2051
1.C.2052	Diagnostic reagents, glues, gelatines, inks, photographic chemical material, biofuel, lubricating preparations and other chemical products	20411, 2052, 2059
1.C.206	Man-made fibres	206
1.C.208	Narcotics, illegal	20
1.C.21	Basic pharmaceutical products and pharmaceutical preparations	21
1.C.218	Medicaments, illegal	21
1.C.2211	Rubber tyres and tubes	2211
1.C.2212	Reclaimed rubber; rubber tubes; conveyor belts, articles of apparel, floor coverings, hygienic and pharmaceutical articles of rubber; other rubber products	2219
1.C.222	Plastic packing goods; linoleum, builders' ware, office supplies, household articles of plastics; other plastic products	222
1.C.231	Glass and glass products	231
1.C.232	Ceramic products, clay building materials, cements, concretes, ornamental or building stone and other non-metallic mineral products	232–239
1.C.241	Basic metals, except precious metals; tubes, bars, wire and other products of the first processing of steel	241–245, excl. 2441
1.C.242	Precious metals, unwrought or in semi-manufactured forms, or in powder form	2441
1.C.251	Structural metal products; reservoirs of metal; steam generators, cutlery, tools, wire products, fasteners; ships' propellers; metal articles for bathroom and kitchen; other fabricated metal products	25, excl. 254
1.C.254	Weapons and ammunition	254
1.C.261	Communication equipment; measuring, testing and navigating equipment; electronic, optical and medical instruments, automation equipment, mobile phones and other phones; parts thereof	2611, 26121, 26123–26129, 26301–26309, 264043–264044, 26405, 2651, 26522, 26529, 266, 267012, 267015–267016, part of 267017; 267018, part of 267019; 267022–267099
1.C.262	Computing machinery and parts and accessories thereof, peripheral equipment; magnetic and optical media	26122, 262, 268
1.C.264	Video monitors, tape recorders, video cameras, headphones and other consumer electronics; watches and clocks; cameras and lenses	264, 26521, 267011, 267013–267014, part of 267017, part of 267019, part of 267021

Product code	Product groups, margins and adjustments	CPA 2008
1.C.271	Electric motors, generators, transformers and electricity distribution and control apparatus; accumulators, wiring and other electrical equipment	271–273, excl. 27201
1.C.272	Primary cells and primary batteries	27201
1.C.274	Electric lighting equipment; non-electrical lamps and lighting fittings	274
1.C.275	Electric and non-electric domestic appliances, parts thereof	275
1.C.281	General- and special-purpose machinery, parts thereof	281, excl. 28944
1.C.289	Sewing machines of the household type	28944
1.C.2899	Equipment, made for own use	28
1.C.29101	Internal combustion engines of a kind used for motor vehicles; bodies, parts, accessories, electrical and electronic equipment for motor vehicles; parts of trailers and semi-trailers	29101, 29109, 29201, 29203, 29209, 293
1.C.29102	Passenger cars	291021–291023
1.C.29103	Goods vehicles, crane lorries, fire engines and other special-purpose motor vehicles; trailers and semi-trailers; containers	291024, 29103–29104, 29202, 29105, excl. 291052
1.C.291052	Vehicles for travelling on snow, golf cars and the like, with engines	291052
1.C.301	Ships, boats, floating structures	301
1.C.302	Railway and tramway locomotives and rolling stock; mechanical traffic control equipment	302
1.C.303	Aircraft; aircraft engines, parts and accessories	303
1.C.304	Military fighting vehicles, parts thereof	304
1.C.3091	Motorcycles and side-cars, parts thereof	3091
1.C.3092	Bicycles, invalid carriages, baby carriages, golf carts, hand carts; part thereof	3092
1.C.31	Furniture	31
1.C.321	Coins, precious or semi-precious stones; jewellery and related articles	321, excl. 3213
1.C.322	Musical instruments, sports goods, games and toys, brooms, brushes, umbrellas, candles, artificial flowers, ball point pens, markers and other goods	3213, 322–324, 329, excl. 329923–329924
1.C.325	Syringes, sterilisers; artificial parts of the body; ophthalmic instruments; instruments and appliances used in dental treatment; orthopaedic appliances; medical furniture; other medical and dental instruments and supplies	325, excl. 32504
1.C.326	Spectacles, lenses and parts thereof	32504
1.C.327	Press-fasteners, snap-fasteners, press-studs and parts thereof; buttons; slide fasteners	329923–329924
1.C.3316	Repair and maintenance services of aircraft	3316
1.C.333	Repair services of fabricated metal products, machinery, equipment, ships and other transport equipment; installation services of industrial machinery and equipment	33, excl. 3316
1.D.351	Electricity	3511, 3514
1.D.3512	Electricity network services	3512, 3513
1.D.352	Manufactured gas	3521
1.D.3529	Distribution services of gaseous fuels through mains	3522–3523
1.D.353	Steam and hot water	353011
1.D.3539	Steam and hot water supply services	353012, 35302

Product code	Product groups, margins and adjustments	CPA 2008
1.E.36	Natural water; water treatment and supply services	36
1.E.37_39	Sewerage services; sewage sludge; waste collection, treatment and disposal services; remediation services and other waste management services	37–39, excl. 38115, 38322 and 38323
1.E.38T	Recyclable waste, secondary raw materials	38115, 38322, 38323
1.F.41_43	Constructions and construction works	41–43
1.F.4199	Own-account construction	41, 43
1.F.4312	Decommissioning costs	43
1.F.4399	Decommissioning costs, own-account	43
1.F.4312	Decommissioning costs	4312
1.F.4399	Decommissioning costs, own-account	4399
1.G.451	Trade services of motor vehicles, motorcycles and related parts and accessories	45, excl. 452
1.G.452	Maintenance and repair services of motor vehicles and motorcycles	452
1.G.461	Wholesale trade services on a fee or contract basis	461
1.G.462	Wholesale trade services	462–469
1.G.47	Retail trade services, except of motor vehicles and motorcycles	47
1.H.491	Passenger rail transport services	491
1.H.4911N	Market services of non-market passenger rail transport services	491
1.H.4919N	Passenger rail transport services (GG)	491
1.H.492	Freight rail transport services	492
1.H.4931	Passenger transportation by bus	4931, 4939
1.H.49311	Passenger transportation by tram and trolleybus	4939*
1.H.4931N	Market services of non-market urban and suburban passenger land transport	4931, 4939
1.H.4932	Taxi operation services	4932
1.H.4939N	Urban and suburban scheduled passenger road transport services (GG)	4931, 4939
1.H.494	Freight transport services by road	494–495
1.H.501	Sea, coastal and inland passenger water transport services	501, 503
1.H.5011N	Market services of non-market passenger water transport services	501, 503
1.H.5019N	Sea, coastal and inland passenger water transport services (GG)	501, 503
1.H.502	Sea and coastal freight water transport services	502 (excl. 502022 and 504022), 504
1.H.5021	Towing and pushing services on sea and coastal waters	502022, 504022
1.H.511	Passenger air transport services	511
1.H.512	Freight air transport services	512
1.H.521	Warehousing and storage services; cargo handling services; freight transport agency services	521, 5224, 5229
1.H.5221	Services incidental to land transportation	5221
1.H.5221N	Market services incidental to railway transportation (GG)	5221
1.H.5229N	Services incidental to railway transportation (GG)	5221
1.H.5222	Services incidental to water transportation	5222
1.H.5223	Services incidental to air transportation	5223
1.H.53	Postal and courier services	53
1.I.55	Accommodation services	55

Product code	Product groups, margins and adjustments	CPA 2008
1.I.56	Food and beverage serving services	56
1.I.569	Catering in schools and kindergartens	56
1.J.581	Publishing services of books, periodicals and other publishing services; advertising space in books and periodicals; private advertisements in newspapers	581
1.J.582	Software publishing services	582
1.J.59_60	Motion picture, video and television programme production services; music publishing services; motion picture projection services; programming and broadcasting services; radio and television advertising time	part of 59–60
1.J.591	Cinematographic film, motion picture and video originals	part of 591121
1.J.598	Films and other video content on disk, tape or other physical media; printed music; musical audio disks, tapes or other physical media	591123, 592031, 592033
1.J.599	Television and radio broadcasting originals	part of 591121; 592013, 592022, 601012, 602020
1.J.59_601N	Market services of non-market television programming and broadcasting activities	59–60
1.J.59_609N	Services of non-market television programming and broadcasting activities (GG)	59–60
1.J.61	Telecommunications services	61
1.J.62_63	Computer programming, consultancy and related services; information services	62–63
1.J.62_631N	Market services of non-market information technology activities	62–63
1.J.62_639N	Services of non-market information technology activities (GG)	62–63
1.J.6299	Own-account produced software	62
1.K.641	Monetary intermediation services	641, part of 643; 649, excl. 6411
1.K.6411	Central banking services	6411
1.K.642	Services of holding companies	642
1.K.64301	Services of investment funds	part of 643
1.K.649	Financial intermediation services indirectly measured (FISIM)	64*
1.K.6511	Life insurance services	6511
1.K.6512	Non-life insurance services	6512
1.K.652	Reinsurance services	652
1.K.653	Pension funding services	653
1.K.66	Services auxiliary to financial services and insurance services	66
1.L.681	Fee for buying and selling of real estate	part of 681
1.L.682	Letting services of non-residential buildings; residential and non-residential buildings management services and other real estate services on a fee or contract basis	part of 681, part of 682, part of 6832
1.L.682M	Letting services of enterprise residential buildings (actual rent)	part of 682
1.L.682HS	Letting services of own residential apartments (actual rent)	part of 682
1.L.682HC	Letting services of own residential houses (actual rent)	part of 682
1.L.682OS	Letting services of own residential apartments (imputed rent)	part of 682
1.L.682OC	Letting services of own residential houses (imputed rent)	part of 682
1.L.682inc	Letting services of residential buildings (income in kind)	part of 682

Product code	Product groups, margins and adjustments	CPA 2008
1.L.6821N	Letting services of state or municipal residential buildings (actual rent)	part of 682
1.L.683S	Own house, garage or holiday house associations management services (NPISH)	part of 6832
1.L.6839N	Public residential buildings management services (GG)	part of 6832
1.M.69_70	Legal and accounting services; services of head offices; management consultancy services	69–70, excl. 691016
1.M.69103	Notarial services	691016
1.M.69_701N	Market services of non-market accounting and management consultancy activities	69–70
1.M.69_709N	Non-market accounting and management consultancy services (GG)	69–70
1.M.71	Architectural and engineering services; technical testing and analysis services	71, excl. 71111
1.M.7111	Plans and drawings for architectural purposes	71111
1.M.7112	Mineral exploration and evaluation services	711233
1.M.711N	Market services of non-market architectural and engineering activities, technical testing and analysis	71
1.M.719N	Non-market architectural and engineering services, technical testing and analysis services (GG)	71
1.M.72	Scientific research and development services	72
1.M.721N	Market services of non-market scientific research and development	72
1.M.729N	Non-market scientific research and development services (GG)	72
1.M.7299	Own account production of scientific research and development	72
1.M.73	Advertising and market research services	73
1.M.741	Translation and interpretation services; interior design services; meteorological services; technical consultancy services and other professional, scientific and technical services	74, excl. 742
1.M.742	Photographic services	742, excl. 74201
1.M.748	Exposed photographic plates, films and microfilms	74201
1.M.75	Veterinary services	75
1.N.771	Rental and leasing services of motor vehicles, other machinery, equipment and tangible goods	771, 773
1.N.771inc	Rental services of motor vehicles and other tangible goods (income in kind)	771
1.N.772	Rental and leasing services of personal and household goods	772
1.N.774	Licensing services for the right to use intellectual property and similar products, except copyrighted works	774
1.N.78	Employment services	78
1.N.791	Tour operator services, visitor information services, tourist guide services	7911, 79901, 79902
1.N.799	Reservation services for package tours and other travel agency services	7912, 79903
1.N.80	Security and investigation services	80
1.N.81	Services to buildings and landscape, industrial cleaning services and other cleaning services	81
1.N.82	Business support services	82
1.O.841N	Public administration and defence; compulsory social security	84

Product code	Product groups, margins and adjustments	CPA 2008
1.O.84112	Services of the European Financial Stability Facility	84
1.O.8413	Road tolls	84
1.O.842	State duties	84
1.O.843	Visas	84
1.O.844	Export of general government services to EU	84
1.O.849N	Public administration and defence (GG)	84
1.P.851	Education services	851–854
1.P.85S	Education services (NPISH)	85
1.P.851N	Market services of non-market education	85
1.P.855	Sports and recreation education services; dancing, music and fine arts school services; language school and IT school services; educational support services	855, excl. 8553
1.P.8553	Driving school services	8553
1.P.859N	Non-market education services (GG)	85
1.Q.86	Human health services	86
1.Q.861013	Rehabilitation services, except hospitals	861013*
1.Q.861N	Market services of non-market human health activities	86
1.Q.869N	Non-market human health services (GG)	86
1.Q.87_88	Residential care services; social work services without accommodation	87–88
1.Q.87_88S	Social work services (NPISH)	87–88
1.Q.87_881N	Market services of non-market residential care activities; market services of non-market social work activities without accommodation	87–88
1.Q.87_889N	Non-market residential care services; non-market social work services without accommodation (GG)	87–88
1.R.90_91	Creative, arts and entertainment services; library, archive, museum and other cultural services	90–91, excl. 900312, 900313 and 910220
1.R.90_91S	Creative, arts and entertainment services; other cultural services (NPISH)	90–91
1.R.90_911N	Market services of non-market creative, arts and entertainment activities; market services of non-market libraries, archives, museums and other cultural activities	90–91
1.R.90_919N	Non-market creative, arts and entertainment services; non-market library, archive, museum and other cultural services (GG)	90–91
1.R.901	Artistic originals	part of 900312
1.R.902	Literary originals	part of 900312, part of 900313
1.R.9099	Original works of painters, graphical artists and sculptors; museum collections	part of 900313; 910220
1.R.92	Gambling and betting services	92
1.R.93	Sporting services and amusement and recreation services	93
1.R.93inc	Undifferentiated services (income in kind)	93
1.R.931N	Market services of non-market sports activities and amusement and recreation activities	93
1.R.93S	Sporting services and amusement and recreation services (NPISH)	93

Product code	Product groups, margins and adjustments	CPA 2008
1.R.939N	Non-market sporting services and amusement and recreation services (GG)	93
1.S.941	Services furnished by business, employers and professional membership organisations; services furnished by trade unions	9411
1.S.942S	Services furnished by membership organisations (NPISH)	94, excl. 9411
1.S.95	Repair services of computers and personal and household goods	95
1.S.961	Washing and (dry-)cleaning services of textile and fur products	961
1.S.962	Hairdressing and other beauty treatment services; physical well-being services; pet care services and other personal services	962
1.S.963	Funeral and related services	963
1.S.968	Prostitution	96*
1.S.969N	Non-market funeral and related services (GG)	963
1.T.97_98	Services of households as employers of domestic personnel; undifferentiated goods and services produced by private households for own use	97–98
1.U	Unspecified	
2	Trade and transport margins	
2.G.451	Trade margin of motor vehicles	451
2.G.461	Merchanting margin	461
2.G.462	Wholesale trade margin	462
2.G.47	Retail trade margin	47
2.H.492	Railway transport margin	492
2.H.494	Road transport margin	494
3	Adjustments	
3.CIF	C.i.f. / f.o.b. adjustments	
3.A.1	Direct purchases in domestic market by non-residents	
3.A.2	Direct purchases abroad by residents	

At the end of the table, two categories are included – trade and transport margins (prefix 2) and direct purchases in domestic market by non-residents, direct purchases abroad by residents, and c.i.f./f.o.b. adjustments (prefix 3) with no CPA or product reference (prefix 1) for these. Furthermore, it should be noted that some of the products are split in the table according to the relevant type of producer (see codes ending with N, S, etc.).

9.1.3. Classification of institutional sectors

The classification of institutional sectors is based on ESA 2010.

Table 0.4 Classification of institutional sectors

Sector code	Institutional sector
S.11	Non-financial corporations
S.12	Financial corporations
S.121	Central Bank
S.122	Deposit-taking corporations except the central bank
S.123	Money market funds (MMFs)
S.124	Non-MMF investment funds
S.125	Other financial intermediaries, except insurance corporations and pension funds
S.126	Financial auxiliaries
S.127	Captive financial institutions and money lenders
S.128	Insurance corporations
S.129	Pension funds
S.13	General government
S.1311	Central government
S.13111	State budgetary units
S.13112	Public-legal units
S.13113	State foundations
S.13114	State hospitals
S.13115	State enterprises
S.1313	Local government
S.13131	Local governments
S.13132	Local government foundations
S.13133	Local government hospitals
S.13134	Local government enterprises
S.1314	Social security funds
S.13141	Health Insurance Fund
S.13142	Unemployment Insurance Fund
S.14	Households
S.15	Non-profit institutions serving households

9.2. Classifications used for the income approach

The main classification scheme used for the estimation of GDP according to the income approach is the activity classification based on NACE Rev. 2. The level of industry detail used in the income approach is the same as in the production approach (Table 0.2).

Table 0.5 Classification of balancing items, distributive transactions and capital transactions

Code	Item / transaction
B	Balancing items
B.1g	Value added, gross / Gross Domestic Product
B.1n	Value added, net / Net Domestic Product
B.2g	Operating surplus, gross
B.2n	Operating surplus, net
B.3g	Mixed income, gross
B.31g	Mixed income, except income in kind of households
B.32g	Income in kind of households

Code	Item / transaction
B.3n	Mixed income, net
B.5	FISIM
D	Distributive transactions
D.1	Compensation of employees
D.11	Wages and salaries
D.110	Wages in cash
D.1101	Adjustment for wages in cash
D.111	Daily allowances
D.112	Rent allowances
D.113	Free food in army, pilot services
D.114	Other allowances in cash
D.115	Wages and salaries (LFS)
D.116	Envelope salary
D.117	Income in kind
D.118	Tips
D.119	Foreign service payments
D.12	Employers' contributions
D.121	Employers' actual social contributions
D.1211	Adjustment for employers' contributions
D.122	Employers' imputed social contributions
D.1221	Employers' imputed social pension contributions
D.1222	Employers' imputed social non-pension contributions
D.2	Taxes on production and imports
D.21	Taxes on products
D.211	Value added type taxes (VAT)
D.212	Taxes and duties on imports, except VAT
D.2121	Custom taxes
D.2122	Taxes on imports, except VAT and duties
D.214	Taxes on products, except VAT, import and export taxes
D.29	Other taxes on production
D.29.D.1	Contributions to the Guarantee Fund
D.29.K.1	Revenue from the sale of emission permits
D.29.M.1	Land tax
D.29.M.2	Fees for closure of roads, streets and squares
D.29.M.3	Business and professional licences
D.29.M.4	Advertising tax
D.29.R	Resource taxes
D.29.R.1	Fees on specific use of water
D.29.R.2	Fees on fishing
D.29.R.21	Recreational fishing charge
D.29.R.22	Commercial fishing charge
D.29.S	Pollution charge
D.29.S.1	Air pollution charge
D.29.S.11	Air pollution charge, except CO ₂ , SO ₂
D.29.S.12	Air pollution charge for CO ₂
D.29.S.13	Air pollution charge for SO ₂
D.29.S.2	Water pollution charge
D.29.S.3	Waste disposal charge
D.29.T	Heavy vehicle use tax
D.3	Subsidies
D.31	Subsidies on products
D.319	Other subsidies on products
D.39	Other subsidies on production

Code	Item / transaction
K	Capital transactions
K.1	Consumption of fixed capital
K.11	Consumption of fixed capital (except households)
K.12	Consumption of fixed capital, households
K.2	Acquisitions less disposals of non-produced non-financial assets

9.3. Classifications used for the expenditure approach

The main classification schemes used in Estonia for the estimation of GDP according to the expenditure approach are the purpose classifications COICOP and COFOG in the field of consumption, the classification of fixed assets, and the activity classification for gross fixed capital formation. COICOP is quite detailed in the Estonian national accounts (116 purpose groups), while COFOG is used just by the previously listed 10 main functions. The breakdown of activities for gross fixed capital formation is also detailed (altogether 150 non-consolidated activities) but not as detailed as for production. The classification of fixed assets shows 19 groups, including the Pi6 breakdown, and it is cross-classified with/in all institutional sectors (both for fixed assets and activities).

9.3.1. Classification of individual consumption by purpose (COICOP)

Household final consumption expenditure (HFCE) is broken down according to the COICOP classification mainly at the 4-digit level. In total, 116 purpose groups are distinguished. Annual HFCE data are published at the 3-digit level. Each COICOP class is divided into “services” (S), “non-durable” (ND), “semi-durable” (SD) and “durable” (D) in compliance with the characteristics of goods and services.

Table 0.6 COICOP classification used

COICOP code	Consumer item	Durability
01	Food and non-alcoholic beverages	
01.1	Food	
01.1.1	Bread and cereals	ND
01.1.2	Meat	ND
01.1.3	Fish	ND
01.1.4	Milk, cheese and eggs	ND
01.1.5	Oils, fats	ND
01.1.6	Fruit	ND
01.1.7	Vegetables	ND
01.1.8	Sugar, jam, honey, chocolate and confectionery	ND
01.1.9	Food products n.e.c.	ND
01.2	Non-alcoholic beverages	
01.2.1	Coffee, tea and cocoa	ND
01.2.2	Mineral water, soft drinks, fruit and vegetable juices	ND
02	Alcoholic beverages, tobacco and narcotics	
02.1	Alcoholic beverages	
02.1.1	Spirits	ND
02.1.2	Wine	ND
02.1.3	Beer	ND
02.2	Tobacco	ND

COICOP code	Consumer item	Durability
02.3	Narcotics	ND
03	Clothing and footwear	
	Goods	
	Services	
03.1	Clothing	
	Goods	
	Services	
03.1.1	Clothing materials	SD
03.1.2	Garments	SD
03.1.3	Other articles of clothing and clothing accessories	SD
03.1.4	Cleaning, repair and hire of clothing	S
03.2	Footwear	
	Goods	
	Services	
03.2.1	Shoes and other footwear	SD
03.2.2	Repair and hire of footwear	S
04	Housing, water, electricity, gas and other fuels	
	Goods	
	Services	
04.1	Actual rentals for housing	
04.1.1	Actual rentals paid by tenants	S
04.1.2	Other actual rentals	S
04.2	Imputed rentals for housing	
04.2.1	Imputed rentals of owner-occupiers	S
04.2.2	Other imputed rentals	S
04.3	Maintenance and repair of the dwelling	
	Goods	
	Services	
04.3.1	Materials for the maintenance and repair of the dwelling	ND
04.3.2	Services for the maintenance and repair of the dwelling	S
04.4	Water supply and miscellaneous services relating to the dwelling	
	Goods	
	Services	
04.4.1	Water supply	ND
04.4.2	Refuse collection	S
04.4.3	Sewerage collection	S
04.4.4	Other services relating to the dwelling n.e.c.	S
04.5	Electricity, gas and other fuels	
04.5.1	Electricity	ND
04.5.2	Gas	ND
04.5.3	Liquid fuels	ND
04.5.4	Solid fuels	ND
04.5.5	Heat energy (hot water, steam and ice)	ND
05	Furnishings, household equipment and routine household maintenance	
	Goods	
	Services	

COICOP code	Consumer item	Durability
05.1	Furniture and furnishings, carpets and other floor coverings	
	Goods	
	Services	
05.1.1	Furniture and furnishings	D
05.1.2	Carpets and other floor coverings	D
05.1.3	Repair of furniture, furnishings and floor coverings	S
05.2	Household textiles	SD
05.3	Household appliances	
	Goods	
	Services	
05.3.1	Major household appliances whether electric or not	D
05.3.2	Small electric household appliances	SD
05.3.3	Repair of household appliances	S
05.4	Glassware, tableware and household utensils	SD
05.5	Tools and equipment for house and garden	
05.5.1	Major tools and equipment	D
05.5.2	Small tools and miscellaneous accessories	SD
05.6	Goods and services for routine household maintenance	
	Goods	
	Services	
05.6.1	Non-durable household goods	ND
05.6.2	Domestic services and household services	S
06	Health	
	Goods	
	Services	
06.1	Medical products, appliances and equipment	
06.1.1	Pharmaceutical products	ND
06.1.2	Other medical products	ND
06.1.3	Therapeutic appliances and equipment	D
06.2	Out-patient services	
06.2.1	Medical services	S
06.2.2	Dental services	S
06.2.3	Paramedical services	S
06.3	Hospital services	S
07	Transport	
	Goods	
	Services	
07.1	Purchase of vehicles	
07.1.1	Motor cars	D
07.1.2	Motorcycles	D
07.1.3	Bicycles	D
07.2	Operation of personal transport equipment	
	Goods	
	Services	
07.2.1	Spare parts and accessories for personal transport equipment	SD
07.2.2	Fuels and lubricants for personal transport equipment	ND

COICOP code	Consumer item	Durability
07.2.3	Maintenance and repair of personal transport equipment	S
07.2.4	Other services in respect of personal transport equipment	S
07.3	Transport services	
07.3.1	Passenger transport by railway	S
07.3.2	Passenger transport by road	S
07.3.3	Passenger transport by air	S
07.3.4	Passenger transport by sea and inland waterway	S
07.3.5	Combined passenger transport	S
07.3.6	Other purchased transport services	S
08	Communication	
	Goods	
	Services	
08.1	Postal services	S
08.2	Telephone and telefax equipment	D
08.3	Telephone and telefax services	S
09	Recreation and culture	
	Goods	
	Services	
09.1	Audio-visual, photographic and information processing equipment	
	Goods	
	Services	
09.1.1	Equipment for the reception, recording and reproduction of sound and pictures	D
09.1.2	Photographic and cinematographic equipment and optical instruments	D
09.1.3	Information processing equipment	D
09.1.4	Recording media	SD
09.1.5	Repair of audio-visual, photographic and information processing equipment	S
09.2	Other major durables for recreation and culture	
	Goods	
	Services	
09.2.1	Major durables for outdoor recreation	D
09.2.2	Musical instruments and major durables for indoor recreation	D
09.2.3	Maintenance and repair of other major durables for recreation and culture	S
09.3	Other recreational items and equipment, garden products and pets	
	Goods	
	Services	
09.3.1	Games, toys and hobbies	SD
09.3.2	Sporting, camping and open-air recreation equipment	SD
09.3.3	Garden products, plants and flowers	ND
09.3.4	Pets and related products	ND
09.3.5	Veterinary and other services for pets	S
09.4	Recreational and cultural services	
09.4.1	Recreational and sporting services	S
09.4.2	Cultural services	S
09.4.3	Games of chance	S

COICOP code	Consumer item	Durability
09.5	Newspapers, books and stationery	
09.5.1	Books	SD
09.5.2	Newspapers and periodicals	ND
09.5.3	Miscellaneous printed matter	ND
09.5.4	Stationery and drawing materials	ND
09.6	Package holidays	S
10	Education	
10.1	Pre-primary and primary education	S
10.2	Secondary education	S
10.3	Post-secondary non-tertiary education	S
10.4	Tertiary education	S
10.5	Education not definable by level	S
11	Restaurants and hotels	
11.1	Catering services	
11.1.1	Restaurants, cafes and the like	S
11.1.2	Canteens	S
11.2	Accommodation services	S
12	Miscellaneous goods and services	
	Goods	
	Services	
12.1	Personal care	
	Goods	
	Services	
12.1.1	Hairdressing salons and personal grooming establishments	S
12.1.2	Electric appliances for personal care	D
12.1.3	Other appliances, articles and products for personal care	ND
12.2	Prostitution	S
12.3	Personal effects n.e.c.	
12.3.1	Jewellery, clocks and watches	D
12.3.2	Other personal effects	SD
12.4	Social protection	S
12.5	Insurance	
12.5.1	Life insurance	S
12.5.2	Insurance connected with the dwelling	S
12.5.3	Insurance connected with health	S
12.5.4	Insurance connected with transport	S
12.5.5	Other insurance	S
12.6	Financial services n.e.c.	
12.6.1	FISIM	S
12.6.2	Other financial services n.e.c.	S
12.7	Other services n.e.c.	S
	Total HFCE (domestic concept)	
plus	Direct purchases abroad by residents	
minus	Direct purchases in domestic markets by non-residents	
	Total HFCE (national concept)	

9.3.2. Classification of the functions of government (COFOG)

The classification of the functions of government used for dividing government output and then government final consumption expenditure is based on the version COFOG 1999 where government functions are split into 10 divisions (1st level). The divisions of the classification are divided into 69 groups (2nd level). COFOG expenditure data are measured for the general government sector at the 2nd level with a breakdown in sub-sectors of government.

9.3.3. Gross fixed capital formation

Gross fixed capital formation estimates are broken down by institutional sector, by activity and by type of fixed asset. SE is also able to provide GFCF according to Pi6 and more detailed classifications for all institutional sectors. The breakdown of fixed assets varies in different institutional sectors, being more detailed in the general government sector (see Table 0.7).

Table 0.7 Overview of the types of fixed assets by institutional sector

AN code	Type of fixed assets	NFC	FC	GG	HH	NPISH
AN.111	Dwellings	X		X	X	
AN.111	- Houses	X		X	X	
AN.111	- Flats	X		X	X	
AN.1121	Non-residential buildings	X	X	X	X	X
AN.11221	Roads	X		X		
AN.11222	Other structures	X		X		
AN.1123	Land improvements					X
AN.11231	Costs of ownership transfer on land	X	X	X	X	
AN.1131	Transport equipment	X	X	X	X	X
AN.11321	Information technologies equipment	X	X	X		X
AN.11322	Communication technologies equipment	X	X	X	X	
AN.1139	Other machinery and equipment	X	X	X	X	X
AN.114	Weapons systems			X		
AN.1151	Animal resources yielding repeat products	X			X	X
AN.1152	Plant resources yielding repeat products	X				
AN.1171	R&D	X	X	X		X
AN.1172	Mineral exploration	X		X		
AN.1173	Computer software and databases	X	X			X
AN.1174	Artistic, literary and entertainment originals	X		X		

GFCF is broken down by activities according to the NACE Rev. 2 classification. For GFCF estimates, 154 activities are distinguished, including 65 activities for non-financial corporations, 3 for financial corporations, 17 for general government, 6 for the NPISH sector, and 61 market activities and 2 activities for own final use in the households sector. Table 0.8 shows the list of activities represented in different institutional sectors.

Table 0.8 Activity classification used in GFCF

Activity code	Activity	Sector
<i>Non-financial corporations and households as market producers</i>		
P.51.M.A.01	Crop and animal production, hunting and related service activities	S.11, S.14
P.51.M.A.02	Forestry and logging	S.11, S.14
P.51.M.A.03	Fishing and aquaculture	S.11, S.14
P.51.M.B.05_09	Mining and quarrying	S.11, S.14
P.51.M.C.10_11	Manufacture of food products and beverages	S.11, S.14
P.51.M.C.13_15	Manufacture of textiles, wearing apparel and leather products	S.11, S.14
P.51.M.C.16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	S.11, S.14
P.51.M.C.17	Manufacture of paper and paper products	S.11, S.14
P.51.M.C.18	Printing and reproduction of recorded media	S.11, S.14
P.51.M.C.19	Manufacture of coke and refined petroleum products	S.11
P.51.M.C.20	Manufacture of chemicals and chemical products	S.11, S.14
P.51.M.C.21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	S.11
P.51.M.C.22	Manufacture of rubber and plastic products	S.11, S.14
P.51.M.C.23	Manufacture of other non-metallic mineral products	S.11, S.14
P.51.M.C.24	Manufacture of basic metals	S.11, S.14
P.51.M.C.25	Manufacture of fabricated metal products, except machinery and equipment	S.11, S.14
P.51.M.C.26	Manufacture of computer, electronic and optical products	S.11, S.14
P.51.M.C.27	Manufacture of electrical equipment	S.11, S.14
P.51.M.C.28	Manufacture of machinery and equipment n.e.c.	S.11, S.14
P.51.M.C.29	Manufacture of motor vehicles, trailers and semi-trailers	S.11, S.14
P.51.M.C.30	Manufacture of other transport equipment	S.11, S.14
P.51.M.C.31_32	Manufacture of furniture; other manufacturing	S.11, S.14
P.51.M.C.33	Repair and installation of machinery and equipment	S.11, S.14
P.51.M.D.351	Electric power generation, transmission and distribution	S.11, S.14
P.51.M.D.352	Manufacture of gas; distribution of gaseous fuels through mains	S.11
P.51.M.D.353	Steam and air conditioning supply	S.11, S.14
P.51.M.E.36	Water collection, treatment and supply	S.11, S.14
P.51.M.E.37_39	Sewerage; waste collection, treatment and disposal activities; materials recovery; remediation activities and other waste management services	S.11, S.14
P.51.M.F.41_43	Construction	S.11, S.14
P.51.M.G.45	Wholesale and retail trade and repair of motor vehicles and motorcycles	S.11, S.14
P.51.M.G.46	Wholesale trade, except of motor vehicles and motorcycles	S.11, S.14
P.51.M.G.47	Retail trade, except of motor vehicles and motorcycles	S.11, S.14
P.51.M.H.491	Passenger rail transport, interurban; freight rail transport	S.11
P.51.M.H.4931	Other passenger land transport, except taxi operation	S.11, S.14
P.51.M.H.4932	Taxi operation	S.11, S.14
P.51.M.H.494	Freight transport by road and removal services; transport via pipeline	S.11, S.14
P.51.M.H.50	Water transport	S.11, S.14
P.51.M.H.51	Air transport	S.11
P.51.M.H.52	Warehousing and support activities for transportation	S.11, S.14
P.51.M.H.53	Postal and courier activities	S.11, S.14
P.51.M.I.55	Accommodation	S.11, S.14
P.51.M.I.56	Food and beverage service activities	S.11, S.14

Activity code	Activity	Sector
P.51.M.J.58	Publishing activities	S.11, S.14
P.51.M.J.59_60	Motion picture, video and television programme production, sound recording and music publishing activities; programming and broadcasting activities	S.11, S.14
P.51.M.J.61	Telecommunications	S.11, S.14
P.51.M.J.62_63	Computer programming, consultancy and related activities; information service activities	S.11, S.14
P.51.M.K.66	Activities of insurance agents and brokers	S.14
P.51.M.L.68	Real estate activities	S.11, S.14
P.51.M.L.68201	Rental and operating of own or leased real estate (actual rent)	S.11, S.14
P.51.M.M.69_70	Legal and accounting activities; activities of head offices; management consultancy activities	S.11, S.14
P.51.M.M.71	Architectural and engineering activities; technical testing and analysis	S.11, S.14
P.51.M.M.72	Scientific research and development	S.11, S.14
P.51.M.M.73	Advertising and market research	S.11, S.14
P.51.M.M.74_75	Other professional, scientific and technical activities; veterinary activities	S.11, S.14
P.51.M.N.77	Rental and leasing activities	S.11, S.14
P.51.M.N.78	Employment activities	S.11, S.14
P.51.M.N.79	Travel agency, tour operator and other reservation service and related activities	S.11, S.14
P.51.M.N.80_82	Security and investigation activities; services to buildings and landscape activities; office administrative, office support and other business support activities	S.11, S.14
P.51.M.P.85	Education	S.11, S.14
P.51.M.Q.86	Human health activities	S.11, S.14
P.51.M.Q.87_88	Residential care activities; social work activities without accommodation	S.11, S.14
P.51.M.R.90_92	Creative, arts and entertainment activities; gambling and betting activities	S.11, S.14
P.51.M.R.93	Sports activities and amusement and recreation activities	S.11, S.14
P.51.M.S.94	Activities of business, employers and professional membership organisations; activities of trade unions	S.11, S.14
P.51.M.S.95	Repair of computers and personal and household goods	S.11, S.14
P.51.M.S.96	Other personal service activities	S.11, S.14
	Financial corporations	
P.51.F.K.64	Financial service activities, except insurance and pension funding	S.12
P.51.F.K.65	Insurance, reinsurance and pension funding, except compulsory social security	S.12
P.51.F.K.66	Activities auxiliary to financial services and insurance activities	S.12
	General government	
P.51.N.H.491	Passenger rail transport, interurban	S.13
P.51.N.H.4931	Urban and suburban passenger land transport	S.13
P.51.N.H.50	Water transport	S.13
P.51.N.H.52	Warehousing and support activities for transportation	S.13
P.51.N.J.59_60	Television programme production activities; programming and broadcasting activities	S.13
P.51.N.J.62_63	Other information technology and computer service activities; information service activities	S.13
P.51.N.L.68	Real estate activities	S.13
P.51.N.M.69_70	Accounting, tax consultancy; management consultancy activities	S.13
P.51.N.M.71	Architectural and engineering activities; technical testing and analysis	S.13

Activity code	Activity	Sector
P.51.N.M.72	Scientific research and development	S.13
P.51.N.O.84	Public administration and defence; compulsory social security	S.13
P.51.N.P.85	Education	S.13
P.51.N.Q.86	Human health activities	S.13
P.51.N.Q.87_88	Residential care activities; social work activities without accommodation	S.13
P.51.N.R.90_91	Creative, arts and entertainment activities; libraries, archives, museums and other cultural activities	S.13
P.51.N.R.93	Sports activities and amusement and recreation activities	S.13
P.51.N.S.96	Other personal service activities	S.13
	<i>Households' activities for own final use</i>	
P.51.O.F.41	Construction	S.14
P.51.O.L.68202	Real estate activities	S.14
	<i>NPISH</i>	
P.51.S.L.6832	Own house, garage and holiday house associations management n.e.c.	S.15
P.51.S.P.85	Education	S.15
P.51.S.Q.87_88	Residential care activities; social work activities without accommodation	S.15
P.51.S.R.90_92	Creative, arts and entertainment activities	S.15
P.51.S.R.93	Sports activities and amusement and recreation activities	S.15
P.51.S.S.94	Activities of membership organisations	S.15
P.51U	Unspecified capital formation	

9.3.4. Changes in inventories

The following types of inventories are specified in the supply and use tables.

Table 0.9 Types of inventories

Inventory code	Inventory
P.52	Changes in inventories
P.521	Raw materials
P.522	Work in progress
P.523	Finished goods reserves
P.524	Goods reserves for resale
P.527	Holding gains (P.522, P.523)
P.528	State inventories
P.529	Holding gains (P.521, P.524)

9.3.5. Exports and imports

In foreign trade statistics, commodities are classified according to the Combined Nomenclature, which was introduced on 1 April 1993 and is updated every year on 1 January. Data on imports and exports of goods are obtained at detailed level (10-digit level) and are transformed to CPA products before the integration into the supply and use tables.

In addition, the Classification by Broad Economic Categories (BEC) is used to classify imported goods into intermediate, consumption and capital goods.

In the supply and use tables, exports and imports of goods and services are classified on the basis of ESA 2010 productive transaction classification. However, some transactions are broken down in sub-items (see Table 0.10).

Table 0.10 Classification of exports and imports of goods and services

Code	Transaction
P.6	Exports of goods and services
P.6U	Unspecified exports
P.611	Exports of goods by producers
P.612	Export of services of processing goods
P.613	Exports of goods by traders
P.62	Exports of services
P.63	Re-export
P.7	Imports of goods and services
P.7U	Unspecified imports
P.711	Direct imports of goods
P.712	Import of services of processing goods
P.713	Imports of trade goods
P.72	Imports of services

9.4. Classification used in the transition from GDP to GNI

The following classification is used in the transition from GDP to GNI.

Table 0.11 Classification of transition items from GDP to GNI

Code	Item
D.1	Compensation of employees paid to/received from the ROW
D.2	Taxes on production and imports paid to the institutions of the EU
D.3	Subsidies received from the institutions of the EU
D.4	Property income paid to/received from the ROW
D.41	interest
D.42	distributed income of corporations
D.43	reinvested earnings on FDI
D.44	other investment income

Chapter 10. Main data sources used

This chapter gives an overview of the main data sources for the national accounts. Most data for the compilation of the GDP are obtained from statistical surveys and administrative sources.

Table 0.12 List of sources used for Estonian national accounts

Ref. no	Source	Prod.	Inc.	Exp.	GNI
10.1.1.	Structural Business Statistics (SBS)	X	X	X	
10.1.2.	Economic indicators of agricultural, forestry and fishing enterprises	X	X	X	
10.1.3.	Industrial production statistics (PRODCOM)	X			
10.1.4.	Energy and fuels statistics	X		X	
10.1.5.	Statistical survey of non-profit institutions	X	X	X	
10.1.6.	Labour Force Survey	X	X		
10.1.7.	Tax declarations on business income of sole proprietors	X	X	X	
10.1.8.	Tax declarations on customs duties and import taxes (excise on alcohol, tobacco, motor fuel and vehicles)	X			
10.1.9.	Statistics on registration of vehicles	X		X	
10.1.10.	Statistics on research and development in enterprises	X		X	
10.1.11.	Statistics on research and development in non-profit institutions	X		X	
10.1.12.	Public Sector Financial Statements (PSFS)	X	X	X	
10.1.13.	Monthly detailed report on tax accrual	X	X		
10.1.14.	Financial intermediation and auxiliary services survey	X	X	X	
10.1.15.	Insurance statistics	X	X	X	
10.1.16.	Financial statements of Eesti Pank	X	X	X	
10.1.17.	Financial corporations sector statistics	X	X	X	
10.1.18.	Financial statements of Estonian Financial Supervision and Resolution Authority (EFSRA)	X			
10.1.19.	Leasing sector statistics	X	X	X	
10.1.20.	Literary originals statistics	X			
10.1.21.	Cinematographic film, movies and video statistics	X			
10.1.22.	Radio and television statistics	X			
10.1.23.	Artistic originals statistics	X			
10.1.24.	Forest growth and felling statistics	X		X	
10.1.25.	Wood material roadside price statistics	X		X	
10.2.1.	Population and Housing Census of 2011		X	X	
10.2.2.	Declaration of payments of income tax, social tax and mandatory funded pension and unemployment insurance premium		X		
10.2.3.	Reports on fringe benefits granted to employees		X		
10.2.4.	Estonian Social Survey	X	X	X	
10.3.1.	Household Budget Survey (HBS)	X	X	X	
10.3.2.	Environmental statistics			X	
10.3.3.	Education statistics			X	
10.3.4.	Justice and security statistics about penal institutions			X	
10.3.5.	Social protection statistics			X	
10.3.6.	Statistics about compulsory military service			X	

Ref. no	Source	Prod.	Inc.	Exp.	GNI
10.3.7.	Statistics about people living in abbeys			X	
10.3.8.	Statistics about travel services			X	
10.3.9.	Register of Construction Works			X	
10.3.10.	Foreign trade statistics: Intrastat			X	
10.3.11.	Foreign trade statistics: Extrastat			X	
10.3.12.	Balance of payments			X	X
10.3.13	Foreign trade in services			X	
10.4.	Other sources used for the transition from GDP to GNI				X

10.1 Statistical surveys and other data sources used for the production approach

This section describes the primary data sources used in the compilation of the GDP by the production approach, for which most data are obtained from surveys or administrative databases.

10.1.1 Structural Business Statistics (SBS)

The Structural Business Statistics give comprehensive and accurate information about the non-financial corporations sector that is relevant for the production, income and expenditure approaches in the national accounts. It is the main source for the estimation of the output, intermediate consumption, value added and its components, GFCF and changes in inventories of non-financial corporations. The SBS are used for HFCE estimates as well.

SBS data collection is based on the statistical survey EKOMAR (i.e. Comprehensive Annual Enterprise Report, also known as enterprise's complex (unified) annual questionnaire). EKOMAR was introduced in 2001 to fulfil EU requirements concerning SBS. Thus, 2000 was the first reference year for which the Structural Business Statistics data were collected with the questionnaire EKOMAR. The SBS are compiled by the Economic and Environmental Statistics Department of Statistics Estonia.

The EKOMAR survey covers all activities in NACE Rev. 2 Sections A to S with the exception of financial and insurance activities (Section K), public administration and defence; compulsory social security (Section O), and activities of membership organisations (Division 91). SBS do not cover the activity NACE A (agriculture, forestry, fishing), but NACE A is included based on the needs of economic accounts for agriculture, environmental accounting, etc.

<i>Name of survey:</i> EKOMAR 2021
<i>Link to surveys undertaken at the European level (e.g. structural business statistics):</i> SBS 2021
<i>Reporting units (e.g. enterprise/ local KAU/ household):</i> In general, the reporting unit is a legal person. The statistical unit 'enterprise' was implemented starting from reference year 2016: 2 enterprises were created and included in the SBS. In the following years, enterprises have been added, but at the same time, some of them have also ceased operation. As of 2021, there were 6 enterprises.
<i>Periodicity (e.g. annual/quarterly/other – to be specified):</i> Annual
<i>Time of availability of results (e.g. 18 months after the end of the survey period):</i> t + 13 months
<i>Sampling frame (e.g. name of business register used/ population census):</i> The register of economically active enterprises, called the Statistical Profile, is used as the sampling frame. During the SBS data production process, the activeness of enterprises has to be adjusted – non-active enterprises are excluded and <u>the initially out-of-scope units are added based on the submitted annual reports.</u>

The frame for SBS and all other business surveys is the Business Register for Statistical Purposes of Statistics Estonia.

Business statistics are compiled on the basis of the data on economically active entities. In order to produce business statistics, Statistics Estonia keeps a business register for statistical purposes. Its data are obtained from the Business Register, the non-profit associations and foundations register, the register of taxable persons, and the state register of state and local government institutions. In addition to legal registers, other data sources are used, such as the data of the Estonian Tax and Customs Board as well as statistical and financial reports, etc. In the Business Register for Statistical Purposes, statistical units for the production of official statistics are specified; economic entities are classified on the basis of international standards ; and economically active entities are identified. Entities are considered to be economically active if, in a given year, they have shown signs of activity: turnover, paid employees, investments. 'Signs of life' indicating economic activity identified from other sources are also taken into account.

Initial frame of active economic entities

All entities registered in Estonia are entered into the Business Register for Statistical Purposes. However, unlike legal registers, the statistical business register provides a frame of active economic entities for each year, comprising only the entities that were active in a given year, including those that were active only for a certain period of the year. The frame of active economic entities (also referred to as the Statistical Profile) compiled by November of each year is used as the frame for the annual statistics for that year and for the short-term statistics for the following year, from which samples are drawn. The data for the frame of economic entities are published in the statistical database in January of the following year to provide users with information on the previous year as soon as possible. The frame of entities compiled by November does not include data for the whole year and is therefore referred to as the initial frame of active economic entities.

Final frame of active economic entities

The quality and coverage of administrative data sources used to update the statistical register have increased. Therefore, a final frame of active economic entities can be compiled for official statistics by November of the year following the reference year when most of the annual data are available. This frame is used to produce annual business statistics, such as business demography statistics, structural business statistics (annual economic indicators of enterprises), etc. The final frame of active economic entities was compiled for the first time for the year 2021.

Survey is compulsory or voluntary? Compulsory (Official Statistics Act, §28)

Main features of survey methodology (e.g. PPS sampling/ panel of respondents/ use of a size threshold for sampling/ postal questionnaire/ telephone interview):

The methodology to obtain the data is a census. The data are available for all active enterprises at individual level (starting from reference year 2019).

The methodology to obtain the data on non-financial enterprises (survey EKOMAR) is a census – combining the statistical questionnaire and administrative information. For imputation, information available from the administrative source (i.e. annual reports) is used. For characteristics missing in annual reports, model-based estimates are used. In the absence of annual reports, donor imputation, data of the previous year and mean value imputation are used. Before 2019, the Horvitz-Thompson estimator was used for grossing-up, i.e. for estimating population totals.

The data are compiled by combining statistical questionnaires and administrative information (annual reports). Statistical questionnaires are used to collect data from all larger enterprises, i.e. enterprises with 20 or more persons employed. In addition, statistical questionnaires are used to collect data from enterprises with fewer than 20 persons employed, which had extremely important economic indicators (outliers) in their kind of activity in the previous year.

To collect data with statistical questionnaires, Statistics Estonia uses the web-based electronic data submission system eSTAT. It gives the data provider a possibility to check the correctness of data before submitting the questionnaire and to correct the errors. The statistical questionnaires in eSTAT are prefilled with available data from annual reports provided to the Business Register. For EKOMAR 2021, the pre-filling was done within one hour after submission of the annual report to the Register. The data provider has to fill in the gaps, i.e. information not available from the annual report, and specify the prefilled information if necessary.

As administrative data for the smaller enterprises, annual reports data from the Business Register and model-based estimates are used for all characteristics. Annual reports from the Business Register (under the Ministry of Justice) contain characteristics directly available or with a good proxy in the administrative source: number of employees, number of employees in full-time equivalent units, turnover, turnover from industrial, construction, service or trading activities, personnel costs, wages and salaries, social security costs, changes in stocks of goods

and services, changes in stocks of finished products and work in progress, changes in stocks of goods purchased for resale in the same condition as received, balance sheet data.
<i>Population size:</i> 134,648
<i>Sample size:</i> 5,074
<i>Survey response rate:</i> 89.8%
<i>Method used to impute for missing data:</i> For characteristics missing in the administrative information, model-based estimates are used; also, the methods of donor imputation and mean value imputation are applied. The most important sources of errors are non-response and modelling errors when using administrative information.
<i>Variable used for grossing-up to the population (e.g. turnover/ employment):</i> Not applicable (census survey).
<i>Sample coverage, as % in terms of variable used for grossing-up (e.g. sample covers 60% of employment recorded in the sampling frame):</i> Not applicable (census survey). The methodology to obtain the data is a census – combining the statistical questionnaire and administrative information. The statistical questionnaire is used for enterprises with 20 or more persons employed and for enterprises with fewer than 20 persons employed, which had extremely important economic indicators (outliers) in their kind of activity in the previous year. For all other active enterprises, micro data from the administrative source were used. The data about population, sample and respondents by economic activity are published in the statistical database on the website of Statistics Estonia: https://andmed.stat.ee/en/stat/majandus__ettevetete-majandusnaitajad__ettevetete-uldkogum-valim__aastastatistika/EM026
<i>Main variables collected:</i> Employment variables (number of persons employed, hours worked), income statement, incl. detailed breakdown of costs (i.e. materials, supplies and services), breakdown of turnover by NACE activities, balance sheet data, changes in fixed assets, incl. investments.
<i>Further adjustments made to the survey data:</i> Data on turnover from industrial activities at unit level are compared with PRODCOM.

10.1.2 Economic indicators of agricultural, forestry and fishing enterprises

One of the most important sources for producing the Economic Accounts for Agriculture (EAA) and for data about forestry and fishing enterprises is the annual statistical survey about the economic indicators of agricultural, forestry and fishing enterprises. The survey has been conducted since 2000. This survey covers the activities of NACE Rev. 2 Section A (agriculture, hunting and forestry, fishing). The data collected are similar to those in the Structural Business Statistics but also include additional information needed for the economic accounts of agriculture. The survey questionnaire also provides data about the activities of local KAUs. In the economic accounts of agriculture, non-agricultural non-separable activities are considered an integral part of agricultural activity.

<i>Name of survey:</i> Economic indicators of agricultural, forestry and fishing enterprises
<i>Link to surveys undertaken at the European level:</i> Council Regulation No 138/2004/EC on the Economic Accounts for Agriculture in the Community
<i>Reporting units:</i> Enterprise as a legal person
<i>Periodicity:</i> Annual

<i>Time of availability of results:</i> Preliminary data are available 8 months after the end of the survey period. Final data on agricultural enterprises are available 9 months after the end of the survey period, and final data on other enterprises 12 months after the survey period.
<i>Sampling frame:</i> The survey population contains economically active agricultural, forestry and fishing enterprises which are included in the Business Register for Statistical Purposes (Statistical Profile). The frame is stratified by the number of persons employed; in the case of agricultural enterprises, standard output is used as an additional stratification variable.
<i>Survey is compulsory or voluntary?</i> Compulsory (according to the Official Statistics Act)
<i>Population size:</i> For agriculture 3,670, for forestry 2,074 and for fishing 226 enterprises (2021)
<i>Sample size:</i> For agriculture 321, for forestry 82 and for fishing 7 enterprises (2021)
<i>Survey response rate:</i> For agriculture 89.7%, for forestry 93.9% and for fishing 100% (2021)
<i>Method used to impute for missing data:</i> In general, the data on bigger enterprises can be collected totally. If necessary, for the bigger enterprises (enterprises with more than 9 employees), data are imputed on the basis of accounting data. For smaller enterprises (<=9 employees), model-based calculation is used, based on administrative data.
<i>Main variables collected:</i> The collected data are very similar to Structural Business Statistics (balance sheet, income statement, breakdown of turnover, employment, investments, fixed assets, etc.). Additionally, some data are added which are needed specially for the calculation of EAA.
<i>Further adjustments made to the survey data:</i> Both arithmetical and logical checks are used. In case of errors, data providers are normally contacted for clarification. Some smaller errors can be corrected by using information from administrative accounting data.

10.1.3 Industrial production statistics (PRODCOM)

The PRODCOM survey provides statistics on the production of manufactured goods. In SUT, PRODCOM data are used to calculate the industrial output by type of product. Data are collected with the statistical questionnaire “Tööstustooted” (“Manufactured goods”).

<i>Name of survey:</i> Tööstustooted (PRODCOM) 2021
<i>Link to surveys undertaken at the European level:</i> Council Regulation No 3924/91 on the establishment of a Community survey of industrial production (PRODCOM Regulation)
<i>Reporting units:</i> Enterprise
<i>Periodicity:</i> Annual
<i>Time of availability of results:</i> Preliminary data are available 6 months after the end of reference year, final data are available t+12 months.
<i>Sampling frame:</i> The register of economically active enterprises, called the Statistical Profile, is used as the sampling frame.
<i>Survey is compulsory or voluntary?</i> Compulsory (according to the Official Statistics Act)
<i>Main features of survey methodology:</i> Generally, the respondents are legal units with 10 and more persons employed, whose primary or secondary activity is manufacturing (NACE B–C, 06–33). In exceptional cases, enterprises with fewer than 10 persons employed are included in the survey. The data collection should cover at least 90% of the national production per NACE Rev. 2 class. All milk, ice-cream and alcohol producers are covered. Statistics Estonia uses the web-based electronic data submission system eSTAT for data collection. It gives the data provider a possibility to check the correctness of data before submitting the questionnaire and to correct the errors.
<i>Population size:</i> Census
<i>Sample size:</i> 2,106
<i>Survey response rate:</i> 78%
<i>Method used to impute for missing data:</i> Short-term statistics STS, data from annual reports, SBS (EKOMAR questionnaire), external trade data or Estonian Tax and Customs Board's data

<i>Variable used for grossing-up to the population (e.g. turnover/employment):</i> The surveyed data are not grossed up.
<i>Main variable collected:</i> The following information is collected by each product heading: - Total output - Sold output - Value of sold output - of which export - of which subcontracting
<i>Further adjustments made to the survey data:</i> The PRODCOM data on total industrial turnover are checked against the SBS survey data on the same respondent.

10.1.4 Energy and fuels statistics

Energy statistics collect data on energy production as well as energy and fuel consumption. For the SUT, the data are used as additional information to split the intermediate consumption of energy and fuels into product groups (e.g. coal, oil-shale, peat, fuel wood, natural gas, liquefied gas, heavy fuel, shale oil, light fuel, diesel oil, motor gasoline, aviation gasoline, heat, etc.).

The information from energy and fuels statistics is used to estimate HFCE, specifically households' consumption of electricity, gas, heat energy, liquid and solid fuels.

<i>Name of survey:</i> Energy and Fuels 2021
<i>Link to surveys undertaken at the European level:</i> Regulation (EC) No 1099/2008 of the European Parliament and of the Council of 22 October 2008 on energy statistics
<i>Reporting units:</i> Enterprises as legal units, institutions, organisations, households. Data on energy are collected from all enterprises that produce, sell or store fuels, electricity or heat. All rail, water and air transport enterprises are also surveyed. Data on other energy consumers are collected with a sample survey. The survey population includes all economically active units. Units with at least 50 persons employed are enumerated completely, while a simple random sample is drawn from the rest of the enterprises. The energy consumption indicators of the public sector have been calculated using the data obtained from the Ministry of Finance's information system on governmental accounts. To obtain data on household energy consumption, irregular surveys are conducted at an interval of several years. In the intermediate years (when the survey is not conducted), estimated data are provided based on the previous survey, data on enterprises selling fuels and the data of the Household Budget Survey. The last survey on household energy consumption was conducted in 2011. The data on the imports and exports of fuels and energy are based on foreign trade statistics. The data on liquid fuels have been revised based on the data of the Estonian Tax and Customs Board. The quantities of fuels in natural units have been recalculated into terajoules based on the average calorific values obtained from the producers and importers of fuels.
<i>Periodicity:</i> Annual
<i>Time of availability of results:</i> Data are published 240 days after the end of the accounting year (T + 240).
<i>Sampling frame:</i> Business Register for Statistical Purposes (Statistical Profile)
<i>Survey is compulsory or voluntary?</i> Compulsory according to the Official Statistics Act
<i>Population size in 2021:</i> Approximately 97,000
<i>Sample size:</i> Approximately 6,500 units in different activities
<i>Method used to impute for missing data:</i> In case of missing or unreliable data, estimate imputation based on established regulations is used. The data of the enterprises that did not submit the questionnaire are replaced with the corresponding data averages of similar enterprises. Administrative data are used for checking and imputation. Variables and statistical units which were not collected but which are necessary for producing the output are calculated. New variables are calculated by applying arithmetic conversion to already existing variables. This may be done repeatedly; the derived variable may, in turn, be based on previously derived new variables. For statistical units, weights are calculated, which are used to expand the data of the sample survey to the total population.
<i>Variable used for grossing-up to the population:</i> Number of enterprises for consumption of electricity, heat and fuels

<i>Main variables collected:</i> Production and consumption of energy and fuels by type of commodity (in quantity and in monetary value)
<i>Further adjustments made to the survey data:</i> None

10.1.5 Statistical survey of non-profit institutions

The non-profit institutions survey is implemented especially for national accounts purposes and conducted since 1998. The data received from the statistical survey of NPIs are used for the calculation of value added and its components, intermediate consumption, output and final consumption expenditure.

Data about income and costs are collected using a statistical questionnaire. Starting from the reference year 2015, all economic information about fixed assets is no longer compiled using the questionnaire but is based on the administrative source – annual reports from the Business Register.

<i>Name of survey:</i> Non-profit institutions
<i>Link to surveys undertaken at the European level (e.g. structural business statistics):</i> No links
<i>Reporting units:</i> Non-profit institutions
<i>Periodicity:</i> Annual
<i>Time of availability of results:</i> 10 months after the end of the survey period
<i>Sampling frame:</i> Business Register for Statistical Purposes (Statistical Profile)
<i>Survey is compulsory or voluntary?</i> Compulsory according to the Official Statistics Act (published RT I 12.07 2014, 127)
<i>Main features of survey methodology:</i> Questionnaire. Stratified simple random sampling is used. The population is stratified by economic activity. Strata are formed on the basis of frequency of units with specific NACE activity codes in the population. Non-profit institutions with 10 and more employees and political organisations are totally covered. Starting from the reference year 2015, annual reports from the administrative source (Business Register) are used for fixed assets data.
<i>Population size:</i> 31,360
<i>Sample size:</i> 1,900
<i>Survey response rate:</i> 74%
<i>Method used to impute for missing data:</i> Mainly the average value, the last available value if possible.
<i>Variable used for grossing-up to the population:</i> Number of units
<i>Sample coverage, as % in terms of variable used for grossing-up:</i> The sample covers approximately 6% of units recorded on the sampling frame, but coverage differs by strata. Starting from 2002, political parties are covered entirely.
<i>Main variables collected:</i> Accounting data (profit and loss accounts, income by different sources: fees received from members, endowments and grants from government, voluntary donations, income on property, financial income, other income; and expenditures: wages and salaries, social contributions, unemployment insurance premium, economic expenditures by goods and services, state duty, taxes, consumption of fixed capital, financial expenses, contributions and scholarships, delivery of humanitarian aid etc.); and data about membership and employment.
<i>Further adjustments made to the survey data:</i> Employers' organisations are separated from the survey results and added to the non-financial corporations sector; agricultural associations are added to the households sector. Market producers are separated from non-market producers.

10.1.6 Labour Force Survey

In national accounts, the Labour Force Survey data are used to estimate non-observed economy (employment method).

<i>Name of survey:</i> Estonian Labour Force Survey (ELFS)
<i>Link to surveys undertaken at the European level (e.g. structural business statistics):</i> EU Labour Force Survey
<i>Reporting units (e.g. enterprise/ local KAU/ household):</i> Household
<i>Periodicity (e.g. annual/quarterly/other – to be specified):</i> The survey is a continuous survey providing quarterly and annual results. The reference weeks for the households in the sample are spread uniformly throughout the whole year, i.e. for every week of the year a similar number of interviews is done.
<i>Time of availability of results (e.g. 18 months after the end of the survey period):</i> 45 days after the end of the reference quarter
<i>Sampling frame (e.g. name of business register used/ population census):</i> Statistical Population Register of Estonia (residents of Estonia living in private households)
<i>Survey is compulsory or voluntary?</i> Compulsory
<i>Main features of survey methodology (e.g. PPS sampling/ panel of respondents/ use of a size threshold for sampling/ postal questionnaire/ telephone interview):</i> All persons living permanently in a private household in Estonia are considered the survey target population. Persons living in institutional households (children's homes, care homes, convents, etc.) are excluded. Also, conscripts are excluded. Persons are sampled and all their household members aged 15+ are interviewed. Every household is interviewed four times: during two consecutive quarters and, after a two-quarter period with no interviewing, they are again interviewed twice in the corresponding quarters of the following year (2-(2)-2 rotation plan). The main data collection method is computer assisted telephone interviewing (CATI); computer assisted web interviews (CAWI) are also used. The interviewing is normally done during the week immediately following the reference week but never later than during the two weeks following the reference week.
<i>Population size:</i> The target population comprises all persons aged 15+ with permanent residence in private households in Estonia. The population size was 1,094,881 persons in 2021.
<i>Sample size:</i> 18,749 households in 2021
<i>Survey response rate:</i> 70.1% in 2021
<i>Method used to impute for missing data:</i> Imputation was not used in 2021.
<i>Variable used for grossing-up to the population (e.g. turnover/ employment):</i> Grossing-up of the ELFS data to the population is based on the estimated population of 1 January of the reference year. The expansion coefficients have been calculated according to: a) 5-year age group by sex; 2) place of residence (15 counties + Tallinn); 3) place of residence (urban/rural area); 4) ethnic nationality (Estonian/non-Estonian); 5) educational level (primary/secondary/tertiary).
<i>Sample coverage, as % in terms of variable used for grossing-up (e.g. sample covers 60% of employment recorded on the sampling frame):</i> In 2021, 23,543 ELFS interviews were received, i.e. the sample coverage (excl. non-response) was 2.2%.
<i>Main variables collected:</i> Working-age (15–89) population by labour status (employed, unemployed, outside of labour force); number, hours worked and jobs of employed persons, employees and self-employed persons by industry.
<i>Further adjustments made to the survey data:</i> The main differences between the employment definitions of the ELFS and ESA 2010 are the following: — according to ESA 2010, conscripts are employees while the ELFS defines them as being outside the labour force; — according to ESA 2010, employment also includes non-residents (foreigners staying in Estonia for less than one year) working for resident producer units while the ELFS does not include them; — according to ESA 2010, employment does not include residents who are working abroad or in the extra-territorial organisations in Estonia while the ELFS does; — according to ESA 2010, employment includes voluntary employees if their volunteer activities result in goods, e.g. the construction of a dwelling, church or other building, while the ELFS does not. For use in the national accounts, the ELFS data are adjusted as much as possible to ESA 2010 definitions. ESA 2010 acknowledges two employment concepts: resident persons employed (i.e. national employment concept) and employment in resident production units irrespective of the place of residence of the employee (i.e. domestic concept). When referring to the national concept, the estimations for employed persons involve resident employees and self-employed persons employed by resident and non-resident producer units. In this sense, conscripts are included in employment data from the ELFS. When referring to the domestic concept, the estimations for employed persons involve resident and non-

resident employees and self-employed persons employed by resident producer units. In this sense, conscripts are included in employment and residents who are working abroad or in the extra-territorial organisations are excluded from employment data from the ELFS. This means that ELFS data used by national accounts deviate from the ESA 2010 definitions only by not including the foreign workers and volunteers (these groups are not measured in the ELFS).

10.1.7 Tax declarations on business income of sole proprietors

The summary data of sole proprietors based on their declarations are received from the Tax and Customs Board. All sole proprietors have to report their income to the fiscal authority on an annual basis. Total data are available from 1999 and since year 2008 by kind of activity at the 5-digit level of NACE Rev. 2.

In 2021, there were approximately 19,820 active sole proprietors in Estonia. Although the total number of sole proprietors is quite large, the share of their revenues in total business revenues is small at 0.5%.

<i>Name of data source:</i> Tax declarations on business income of sole proprietors
<i>Organisation collecting the data, and purposes for which data are collected:</i> Estonian Tax and Customs Board. This is necessary for the indication of income tax withheld on business income.
<i>Reporting units:</i> Sole proprietors registered in the Tax and Customs Board or in the Business Register have to report their income to the fiscal authority.
<i>Periodicity:</i> Sole proprietors have to provide the reports to the fiscal authority 3 months after the end of the year.
<i>Variables collected:</i> Business income by type of income (income from sale and intermediation of goods, from professional activity or provision of services, from commercial or residential lease etc.), expenses related to business (incl. acquisition costs of fixed assets, goods and services acquired, salaries paid to employees, social tax paid on behalf of employees, fringe benefits granted to employees, other state and local taxes etc.) according to Form E.
<i>Methods used to allow for missing data:</i> Complete coverage
<i>Further adjustments made to the survey data:</i> See explanations in Chapter 3, Section 3.19.

10.1.8 Tax declarations on customs duties and import taxes (excise on alcohol, tobacco, motor fuel and vehicles)

The detailed information on customs duties and import taxes (excise on alcohol, tobacco, motor fuel and packaging) is obtained from the Tax and Customs Board. Data are recorded on an accrual basis.

<i>Name of data source:</i> Tax declarations on customs duties and import taxes (excise on alcohol, tobacco, motor fuel and vehicles)
<i>Organization collecting the data, and purposes for which data are collected:</i> The data are collected by the Tax and Customs Board and used to determine excise obligations.
<i>Reporting units:</i> Customs declarations
<i>Periodicity:</i> Quarterly
<i>Variables collected:</i> Imported goods released for free circulation in accordance with the Nomenclature of Estonian Commodities, which is based on the Harmonized System (HS) used in international trade; amount of goods, unit of measure, statistical value of goods, tax rates per unit, declared sums.
<i>Methods used to allow for missing data:</i> Complete coverage
<i>Adjustments made for conceptual differences from national accounts concepts:</i> None
<i>Further adjustments made to the data:</i> None

10.1.9 Statistics on registration of vehicles

Monthly data about first registrations of vehicles (passenger cars and motorcycles) are available. Information on registration is used as an indicator for purchases of cars.

<i>Name of data source:</i> Statistical database tables TS322: First registrations of vehicles (months) and TS32: Vehicles and private vehicles, 31 December
<i>Organisation collecting the data, and purposes for which data are collected:</i> Statistics Estonia (SE) receives the data from the Transport Administration of the Republic of Estonia (TRAM) who keeps the national vehicle registry.
<i>Reporting units:</i> Legal persons and individuals carrying out transactions with their vehicles
<i>Periodicity:</i> TRAM records dealings continuously, the data on registrations are transmitted to SE and published monthly. The total numbers of vehicles in the vehicle registry are transmitted to SE and published yearly.
<i>Variables collected:</i> Monthly: vehicles registered, vehicles registered for the first time and private vehicles registered for the first time, by type. Annually: vehicles and private vehicles at the end of the year, by type.
<i>Methods used to allow for missing data:</i> Not relevant (complete coverage)
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Adjustments are not made.
<i>Further adjustments made to the data:</i> Adjustments are not made.

10.1.10 Statistics on research and development in enterprises

This survey is the main source of data for estimates of the output of own-account R&D of the non-financial corporations sector.

<i>Name of survey:</i> Research and development activities in enterprises. Year 2021
<i>Link to surveys undertaken at the European level (e.g. structural business statistics):</i> There is a link to the SBS survey as information on new-born enterprises in certain activities (R&D, High Technology, biotech) is used to identify units engaged in R&D and not yet identified among other firms.
<i>Reporting units (e.g. enterprise/ local KAU/ household):</i> Enterprise
<i>Periodicity (e.g. annual/quarterly/other – to be specified):</i> Annual
<i>Time of availability of results (e.g. 18 months after the end of the survey period):</i> T+10
<i>Sampling frame: (e.g. name of business register used/ population census):</i> List of institutions, non-profit associations and companies that are engaged in or are potentially engaged in research and development (R&D). The list is generated from the Business Register for Statistical Purposes. Grant list of the Estonian Research Council. Enterprises who have reported R&D activities since 2021 (as part of various statistical activities). Enterprises with knowledge-intensive business activities that were born in the previous year.
<i>Survey is compulsory or voluntary?</i> The survey is compulsory for data providers.
<i>Main features of survey methodology (e.g. PPS sampling/ panel of respondents/ use of a size threshold for sampling/ postal questionnaire/ telephone interview):</i> Data collection method: electronic questionnaire completed online with the alternative possibility of downloading a PDF file and sending the filled-in questionnaire by post, fax or e-mail.
<i>Population size:</i> 1,478
<i>Sample size:</i> 1,363
<i>Survey response rate:</i> Unit response rate (weighted) 92%
<i>Method used to impute for missing data:</i> For R&D expenditures, no imputation is used. For R&D personnel (FTE) and for researchers (FTE), data from the previous year were used.
<i>Variable used for grossing-up to the population (e.g. turnover/ employment):</i> None
<i>Sample coverage, as % in terms of variable used for grossing-up (e.g. sample covers 60% of employment recorded on the sampling frame):</i>

<i>Main variables collected:</i> Total R&D expenditures, total R&D personnel, total number of researchers
<i>Further adjustments made to the survey data:</i> No further adjustments were made.

10.1.11 Statistics on research and development in non-profit institutions

This survey is the main source of data for estimates of the output of own-account R&D of NPISH.

<i>Name of survey:</i> Research and development activities. Year 2021
<i>Link to surveys undertaken at the European level (e.g. structural business statistics):</i> -
<i>Reporting units (e.g. enterprise/ local KAU/ household):</i> Legal entities; households are not included
<i>Periodicity (e.g. annual/quarterly/other – to be specified):</i> Annual census survey covering higher education (HES), government (GOV) and private non-profit (PNP) sectors together. The reference period is a calendar year.
<i>Time of availability of results (e.g. 18 months after the end of the survey period):</i> T+6
<i>Sampling frame: (e.g. name of business register used/ population census):</i> Business Register for Statistical Purposes
<i>Survey is compulsory or voluntary?</i> The survey is compulsory for data providers.
<i>Main features of survey methodology (e.g. PPS sampling/ panel of respondents/ use of a size threshold for sampling/ postal questionnaire/ telephone interview):</i> Data collection method: electronic questionnaire completed online with the alternative possibility of downloading a PDF file and sending the filled-in questionnaire by post or e-mail.
<i>Population size:</i> 166
<i>Sample size:</i> 155
<i>Survey response rate:</i> 93.4%
<i>Method used to impute for missing data:</i> For imputation, data from the previous year were used.
<i>Variable used for grossing-up to the population (e.g. turnover/ employment):</i> None
<i>Sample coverage, as % in terms of variable used for grossing-up (e.g. sample covers 60% of employment recorded on the sampling frame):</i> Not applicable
<i>Main variables collected:</i> Total R&D expenditures, total R&D personnel, total number of researchers
<i>Further adjustments made to the survey data:</i> No further adjustments were made.

10.1.12 Public Sector Financial Statements (PSFS)

In the general government sector, the main data sources are based on the information system of Public Sector Financial Statements (PSFS), which is managed by the State Shared Service Centre (SSSC) under the administrative area of the Ministry of Finance. The PSFS system contains information about the general ledgers of the public sector. The public sector accounting principles are regulated by the general guidelines of public sector accounting. The guidelines were enforced on 1 Jan 2004, at first in respect of general government units and starting from 1 Jan 2005 expanded to other public sector units. The Ministry of Finance is responsible for the consolidated financial statements of the state, of the government sector and of the public sector.

All public sector accounting entities insert their financial reports into the special web-based database, i.e. the PSFS system, managed by the SSSC. The reports are based on the common chart of accounts and are inserted to the database in the form of a special unified report. All general government sector accounting entities insert their reports into the database monthly. Enterprises controlled by government entities insert their reports quarterly. The deadline is the 25th day from the end of the reporting period. Statistics Estonia decides which entities are

included in the government sector and publishes the relevant information regularly on its webpage.

Information needed for the compilation of government finance statistics is transferred from the information system managed by the SSSC into the database created for that purpose by Statistics Estonia, i.e. the SAAB system. The information is processed by an automated system which uses the accounting data and lists of rules (mainly bridge tables) defined by statisticians as input. Hence, the SAAB system is a database solution developed at Statistics Estonia and used for managing and coding PSFS data according to ESA 2010 rules.

PSFS data are relevant for all three approaches in the national accounts.

<i>Name of data source:</i> Public Sector Financial Statements System
<i>Organisation collecting the data, and purposes for which data are collected:</i> State Shared Service Centre, Statistics Estonia (both under the administrative area of the Ministry of Finance)
<i>Reporting units:</i> Public sector institutional units that adhere to the State Accounting Act.
<i>Periodicity:</i> Monthly, quarterly
<i>Variables collected:</i> All accounting entries (balance sheet, revenue and expenses accounts, off-balance sheet information); government sector entities' transactions and positions with non-residents
<i>Methods used to allow for missing data:</i> -
<i>Adjustments made for conceptual differences from national accounts concepts:</i> -
<i>Further adjustments made to the data:</i> -

10.1.13 Monthly detailed report on tax accrual

This report by the Tax and Customs Board is the main source for data on tax revenue in Estonia. The cash data in this report are time-adjusted where necessary and provide information about all state taxes and excises which are defined in the Taxation Act. Additional sources are required only for local taxes and special cases which have been defined as taxes only for national accounts purposes. Therefore, taxes on products (D.21) are heavily dependent on the monthly detailed report on tax accrual.

<i>Name of data source:</i> Monthly detailed report on tax accrual
<i>Organisation collecting the data, and purposes for which data are collected:</i> Tax and Customs Board.
<i>Reporting units:</i> Legal persons and individuals declaring taxes
<i>Periodicity:</i> Monthly
<i>Variables collected:</i> Amounts of accrued taxes
<i>Methods used to allow for missing data:</i> Not relevant (complete coverage)

10.1.14 Financial intermediation and auxiliary services survey

In the national accounts, both statistical and administrative sources are used for the financial corporations sector. The financial corporations sector is divided into 9 sub-sectors, four of which are covered by administrative sources (see below): central bank (sub-sector S.121), deposit-taking corporations (sub-sector S.122), leasing companies (part of sub-sector S.125) and pension funds (sub-sector S.129).

Statistical surveys include all other financial enterprises which are not covered by administrative sources: non-MMF investment funds (sub-sector S.124), other financial intermediaries (sub-sector S.125), financial auxiliaries (sub-sector S.126), captive financial institutions and money lenders (sub-sector S.127) and insurance corporations (sub-sector S.128).

<i>Name of survey:</i> Financial intermediation and auxiliary services
<i>Link to surveys undertaken at the European level:</i> No links
<i>Reporting units:</i> Enterprises
<i>Periodicity:</i> Different parts have different periodicity: the profit and loss account and balance sheet are quarterly, data on employment and fixed assets are annual.
<i>Time of availability of results:</i> 40 days after the end of the survey period
<i>Sampling frame:</i> Business Register for Statistical Purposes (Statistical Profile)
<i>Survey is compulsory or voluntary?</i> Compulsory according to the Official Statistics Act
<i>Main features of survey methodology:</i> Postal questionnaire sent to all enterprises classified in NACE Rev. 2 divisions 64 and 66 and not covered by administrative sources
<i>Population size:</i> 408 enterprises providing financial services, including leasing companies that have not joined the Leasing Association (group 6491), and 130 auxiliary enterprises (division 66) in 2021.
<i>Sample size:</i> Not relevant (complete coverage)
<i>Survey response rate:</i> Quarterly 30% and annual 67% by deadline
<i>Method used to impute for missing data:</i> Additional data from administrative sources. The missing data are replaced with figures from annual reports provided by enterprises to the Business Register. Check-up is done separately for each enterprise.
<i>Variable used for grossing-up to the population:</i> Not relevant
<i>Sample coverage, as % in terms of variable used for grossing-up (e.g. sample covers 60% of employment recorded on the sampling frame):</i> Not relevant
<i>Main variables collected:</i> Profit and loss account, balance sheet and data on fixed assets
<i>Further adjustments made to the survey data:</i> Misclassified enterprises, whose main activity is not NACE Section K in the year 2021, are separated and treated as non-financial corporations.

10.1.15 Insurance statistics

For the estimation of insurance services for HFCE, the statistical survey of insurance corporations is used.

<i>Name of survey:</i> Insurance statistics
<i>Link to surveys undertaken at the European level:</i> SBS Annex 5
<i>Reporting units:</i> Insurance corporations
<i>Periodicity:</i> Different parts have different periodicity: data on premiums received and claims paid are monthly; the profit and loss account is quarterly, the balance sheet is quarterly and annual; data on employment and fixed assets are annual.
<i>Time of availability of results:</i> Monthly data are available 15 days, quarterly data 45 days and annual data 70 days after the end of the survey period.
<i>Sampling frame:</i> Business Register for Statistical Purposes (Statistical Profile)
<i>Survey is compulsory or voluntary?</i> Compulsory according to the Official Statistics Act
<i>Main features of survey methodology:</i> Postal questionnaire sent to all units classified in NACE Rev. 2 division 65.1
<i>Population size:</i> 12 non-life insurers and 5 life insurance companies (complete coverage)
<i>Sample size:</i> Not relevant (complete coverage)
<i>Survey response rate:</i> 100%
<i>Method used to impute for missing data:</i> Not relevant (complete coverage)
<i>Variable used for grossing-up to the population:</i> Not relevant
<i>Sample coverage, as % in terms of variable used for grossing-up (e.g. sample covers 60% of employment recorded on the sampling frame):</i> Not relevant

<i>Main variables collected:</i> Gross premiums received and claims paid by lines of business, profit and loss account, balance sheet figures and employment
<i>Further adjustments made to the survey data:</i> No adjustments are made to monthly data. Annual data are compared with the data from annual reports.

The administrative data used for the financial corporations sector are obtained from Eesti Pank, from the Estonian Insurance Supervisory Authority and from the Estonian Leasing Association.

10.1.16 Financial statements of Eesti Pank

Sub-sector S.121 (NACE Rev. 2 class 64.11) contains one institution – Eesti Pank. Statistics on Eesti Pank are compiled quarterly by Eesti Pank.

<i>Name of data source:</i> Financial statements of Eesti Pank
<i>Organisation collecting the data, and purposes for which data are collected:</i> Eesti Pank
<i>Reporting units:</i> Eesti Pank
<i>Periodicity:</i> Quarterly
<i>Variables collected:</i> Profit and loss account
<i>Methods used to allow for missing data:</i> Not relevant
<i>Adjustments made for conceptual differences from national accounts concepts:</i> No adjustments are made.
<i>Further adjustments made to the data:</i> No adjustments are made.

10.1.17 Financial corporations sector statistics

Data on commercial banks (sub-sector S.122) classified in NACE Rev. 2 class 64.19 are obtained from Eesti Pank. The data are available on the website of Eesti Pank.

<i>Name of data source:</i> Financial corporations sector statistics
<i>Organisation collecting the data, and purposes for which data are collected:</i> Eesti Pank. The data are used in monetary policy analysis, for the assessment of the developments and risks of the financial corporations sector.
<i>Reporting units:</i> 14 commercial banks and 26 savings and loan associations
<i>Periodicity:</i> Quarterly
<i>Variables collected:</i> Profit and loss account, balance sheet data. For GFCF estimation purposes, acquisitions, disposals and major improvements during the reporting period are available.
<i>Methods used to allow for missing data:</i> Not relevant
<i>Adjustments made for conceptual differences from national accounts concepts:</i> No adjustments are made.
<i>Further adjustments made to the data:</i> Items “Other income” and “Other expenditure” are adjusted on the basis of the annual reports of the banks.

10.1.18 Financial statements of Estonian Financial Supervision and Resolution Authority (EFSRA)

Data on EFSRA (part of sub-sector S.126) classified in NACE Rev. 2 class 66.11 are obtained from EFSRA. The data are available on the website of EFSRA.

<i>Name of data source:</i> Financial statements of EFSRA
<i>Organisation collecting the data, and purposes for which data are collected:</i> EFSRA
<i>Reporting units:</i> EFSRA
<i>Periodicity:</i> Annual

<i>Variables collected:</i> Profit and loss account
<i>Methods used to allow for missing data:</i> Not relevant
<i>Adjustments made for conceptual differences from national accounts concepts:</i> No adjustments are made.
<i>Further adjustments made to the data:</i> No adjustments are made.

10.1.19 Leasing sector statistics

The bigger leasing companies (part of sub-sector S.125) classified in NACE Rev. 2 class 64.91 established the Estonian Leasing Association in 1995 and have had to provide a wide variety of data since then. The data are published on the website of Eesti Pank.

<i>Name of data source:</i> Leasing sector statistics
<i>Organisation collecting the data, and purposes for which data are collected:</i> Estonian Leasing Association. The data are collected for statistical purposes.
<i>Reporting units:</i> Members of the Estonian Leasing Association: 8 leasing companies
<i>Periodicity:</i> Quarterly
<i>Variables collected:</i> Balance sheet, profit and loss account, lease portfolio (new sales and stock) allocated by different types.
<i>Methods used to allow for missing data:</i> Not relevant
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Leasing companies do not record assets for operating lease in their balance sheets. Lease portfolio stock (of operating lease) is the useful figure for GFCF estimates.
<i>Further adjustments made to the data:</i> No other adjustments

10.1.20 Data sources used for literary originals estimation

The SBS survey of enterprises classified in NACE Rev. 2 division 5811 is the main data source for estimates of literary originals.

<i>Name of survey:</i> SBS survey of enterprises classified in NACE Rev. 2 division 5811
<i>Link to surveys undertaken at the European level (e.g. structural business statistics):</i> SBS
<i>Reporting units (e.g. enterprise/ local KAU/ household):</i> Enterprise
<i>Periodicity (e.g. annual/quarterly/other – to be specified):</i> Annual
<i>Time of availability of results (e.g. 18 months after the end of the survey period):</i> 6 months after the end of the survey period
<i>Sampling frame (e.g. name of business register used/ population census):</i> Business Register for Statistical Purposes (Statistical Profile)
<i>Survey is compulsory or voluntary?</i> Compulsory
<i>Main features of survey methodology (e.g. PPS sampling/ panel of respondents/ use of a size threshold for sampling/ postal questionnaire/ telephone interview):</i> Enterprises with annual expenditures of more than 50,000 euros are totally covered.
<i>Population size:</i> 745 active enterprises classified in NACE Rev. 2 division 5811
<i>Sample size:</i> 221 enterprises
<i>Survey response rate:</i> 15 enterprises' annual reports contained the necessary information.
<i>Method used to impute for missing data:</i> The data from the annual reports of non-responding enterprises classified in NACE Rev. 2 division 5811 published in the e-Business Register are added. For the imputation of the missing data, estimations are made on the basis of the average values from respondents.
<i>Variable used for grossing-up to the population (e.g. turnover/ employment):</i> SBS data about the expenditures of enterprises classified in NACE Rev. 2 division 5811 are used.
<i>Sample coverage, as % in terms of variable used for grossing-up (e.g. sample covers 30% of employment recorded on the sampling frame):</i> The sample comprised 30% of the enterprises in the population.

<i>Main variables collected:</i> Royalties and license fees paid to authors and copyright owners
<i>Further adjustments made to the survey data:</i> The Copyright Compensation Fund data about payments to authors and copyright owners for book loans and reproduction in public libraries, which is similar to royalties, are used. Also, the data of Balance of Payments are used for the exclusion of import of royalties and license fees.

10.1.21 Data sources used for cinematographic film, movies and video originals estimation

The following survey is the main data source for estimates of film originals.

<i>Name of survey:</i> Film
<i>Link to surveys undertaken at the European level (e.g. structural business statistics):</i> No links
<i>Reporting units (e.g. enterprise/ local KAU/ household):</i> Enterprise
<i>Periodicity (e.g. annual/quarterly/other – to be specified):</i> Annual
<i>Time of availability of results (e.g. 18 months after the end of the survey period):</i> 2 months after the end of the survey period
<i>Sampling frame (e.g. name of business register used/ population census):</i> Business Register for Statistical Purposes (Statistical Profile). Also, information from the Ministry of Culture and the Estonian Film Foundation is used.
<i>Survey is compulsory or voluntary?</i> Compulsory
<i>Main features of survey methodology (e.g. PPS sampling/ panel of respondents/ use of a size threshold for sampling/ postal questionnaire/ telephone interview):</i> All the enterprises in the field of film production, film imports and distribution are surveyed (NACE Rev. 2 divisions 5911 and 5913).
<i>Population size:</i> 503 enterprises
<i>Sample size:</i> 503 enterprises
<i>Survey response rate:</i> 84.3% (425 enterprises)
<i>Method used to impute for missing data:</i> The data from the annual reports of missing or non-responding enterprises classified in NACE Rev. 2 divisions 5911 and 5913 published in the e-Business Register are added. For the imputation of the missing data, estimations are made on the basis of the average values from respondents.
<i>Variable used for grossing-up to the population (e.g. turnover/ employment):</i> SBS data about the film production expenditures of enterprises classified in NACE Rev. 2 divisions 5911 and 5913 are used.
<i>Sample coverage, as % in terms of variable used for grossing-up (e.g. sample covers 60% of employment recorded on the sampling frame):</i> The sample comprised 67% of the enterprises in the population.
<i>Main variables collected:</i> Film production expenditures
<i>Further adjustments made to the survey data:</i> If film production expenditures include investments in machinery and equipment, they are excluded.

10.1.22 Data sources used for TV and radio programme originals estimation

The following survey is the main data source for estimates of TV and radio stock programmes.

<i>Name of survey:</i> Radio, Television
<i>Link to surveys undertaken at the European level:</i> No links
<i>Reporting units:</i> Enterprises as legal units, local KAUs
<i>Periodicity:</i> Annual
<i>Time of availability of results:</i> 2 months after the end of the survey period
<i>Sampling frame:</i> The register of economically active enterprises, called the Statistical Profile, is used as the sampling frame.
<i>Survey is compulsory or voluntary?</i> Compulsory
<i>Main features of survey methodology:</i> All the enterprises in the field of TV and radio broadcasting are surveyed (NACE Rev. 2 divisions 60101 and 60201).

<i>Population size:</i> 15 active radio units and 10 active television units
<i>Sample size:</i> 24 active radio channels and 34 active television channels
<i>Survey response rate:</i> 100%
<i>Method used to impute for missing data:</i> The data from the annual reports of missing or non-responding enterprises classified in NACE Rev. 2 divisions 60101 and 60201 published in the e-Business Register are added. For the imputation of the missing data, estimations are made on the basis of the average values from respondents.
<i>Variable used for grossing-up to the population (e.g. turnover/employment):</i> Public Sector Financial Statements and SBS data about radio broadcasting expenditures of units classified in NACE Rev. 2 divisions 60101 and 60201 are used.
<i>Main variable collected:</i> TV and radio broadcasting enterprises' expenditures
<i>Further adjustments made to the survey data:</i> The percentage of originals in total of broadcasts.

10.1.23 Data sources used for artistic originals estimation

The following data source is used for estimates of artistic originals.

<i>Name of data source:</i> Annual report of Estonian Authors' Society (EAU)
<i>Organisation collecting the data, and purposes for which data are collected:</i> Business Register
<i>Reporting units:</i> A single non-profit institution
<i>Periodicity:</i> Annual
<i>Variables collected:</i> Profit and loss account, balance sheet data. For GFCF estimation purposes, acquisitions, disposals and major improvements during the reporting period are available. Royalties paid to EAU members.
<i>Methods used to allow for missing data:</i> Not relevant
<i>Adjustments made for conceptual differences from national accounts concepts:</i> No adjustments are made.
<i>Further adjustments made to the data:</i> The growth rate of royalties and the market interest rate, calculated from a single year, are used.

10.1.24 Data sources used for standing timber estimation (forest growth and felling statistics)

Forest growth and felling statistics are used for estimates of standing timber.

<i>Name of data source:</i> Forest growth and felling statistics
<i>Organisation collecting the data, and purposes for which data are collected:</i> Estonian Environment Agency (EEA)
<i>Reporting units:</i> EEA
<i>Periodicity:</i> Annual
<i>Variables collected:</i> Forest growth and felling statistics by tree species. The data include forest land with managed and partially managed forest.
<i>Methods used to allow for missing data:</i> Not relevant
<i>Adjustments made for conceptual differences from national accounts concepts:</i> No adjustments are made.
<i>Further adjustments made to the data:</i> No other adjustments are made.

10.1.25 Data sources used for standing timber estimation (price statistics)

Price statistics are used for estimates of standing timber.

<i>Name of data source:</i> Wood material roadside price statistics
<i>Organisation collecting the data, and purposes for which data are collected:</i> State Forest Management Centre (RMK)

<i>Name of data source:</i> Wood material roadside price statistics
<i>Reporting units:</i> RMK
<i>Periodicity:</i> Annual
<i>Variables collected:</i> Average roadside prices of wood material by tree species and timber assortment.
<i>Methods used to allow for missing data:</i> Not relevant
<i>Adjustments made for conceptual differences from national accounts concepts:</i> No adjustments are made.
<i>Further adjustments made to the data:</i> No other adjustments are made.

10.2 Statistical surveys and other data sources used for the income approach

For the income approach, mostly the same data sources are used as for the production approach. The full list of sources used for the income approach is given in Table 10.1 above (see the corresponding column). The current section presents the sources that are predominantly used for the income approach.

10.2.1 Population and Housing Census 2021

Population and Housing Census data are used to evaluate the dwelling stock in the benchmark year, which is 2021. The Consumption of Fixed Capital (CFC) of dwellings in the government, households and non-financial enterprises sectors is computed from this dwelling stock.

<i>Name of survey:</i> Population and Housing Census 2021
<i>Link to surveys undertaken at the European level (e.g. structural business statistics):</i> _
The 2021 Population and Housing Census was a register-based census, and data were retrieved from administrative registers. Regulation (EC) No 763/2008 of the European Parliament and of the Council of 9 July 2008 on population and housing censuses is available here: https://eur-lex.europa.eu/eli/reg/2008/763/oj/eng .
The implementing acts are listed on the census website: https://rahvaloendus.ee/en/census-2021/legislation .
<i>Reporting units (e.g. enterprise/ local KAU/ household):</i> Person, household, dwelling, agricultural holding
<i>Periodicity (e.g. annual/quarterly/other – to be specified):</i> Decennial
<i>Time of availability of results (e.g. 18 months after the end of the survey period):</i> The reference time point for the 2021 Population and Housing Census was 31 December 2021. The results were published progressively between June and December 2022. The final set of tables was made available in the public database approximately 12 months after the census moment.
<i>Sampling frame: (e.g. name of business register used/ population census):</i> Not applicable, as the data were collected entirely from administrative data sources.
<i>Survey is compulsory or voluntary?</i> Not applicable, as the data were collected entirely from administrative data sources.
<i>Main features of survey methodology (e.g. PPS sampling/ panel of respondents/ use of a size threshold for sampling/ postal questionnaire/ telephone interview):</i> The Population and Housing Census 2021 was conducted by integrating data from nearly 30 different administrative registers. Key registers included the Population Register, the Register of Buildings, and registers

of the Land Board, the Tax and Customs Board, and the Health Insurance Fund. Additionally, information from other state databases was used to complement the data and enhance the accuracy of the results. The description of the methodology of the 2021 register-based census can be found here: https://www.stat.ee/sites/default/files/2022-06/Registrip%C3%B5hise%20loenduse%20metoodika%20raport_EN.pdf.
<i>Population size:</i> 1,331,824
<i>Sample size:</i> Not applicable, as the data were collected entirely from administrative data sources.
<i>Survey response rate:</i> Not applicable, as the data were collected entirely from administrative data sources.
<i>Method used to impute for missing data:</i> Not applicable. The census data were compiled by combining multiple administrative data sources, minimising the need for imputation of missing data.
<i>Variable used for grossing-up to the population (e.g. turnover/ employment):</i> Not applicable.
<i>Sample coverage, as % in terms of variable used for grossing-up (e.g. sample covers 60% of employment recorded on the sampling frame):</i> Not applicable.
<i>Main variables collected:</i> Information about individuals (mandatory in the EU): place of usual residence, sex and age, legal marital status, country of birth, country of citizenship, place of usual residence one year prior to census, location of place of work, current activity status, occupation, industry (branch of economic activity), status in employment, educational attainment, ever resided abroad and year of arrival in the country (from 1980), locality, household status, family status, type of family nucleus, size of family nucleus, type of private household, size of private household. Information about individuals (national): nationality, mother tongue, number of children born, age of woman at birth of first child, second place of residence, indigenous status, main source of livelihood. Housing-related characteristics: housing arrangements, tenure status of households, type of living quarters, occupancy status of conventional dwellings, type of ownership, number of occupants, useful floor space and/or number of rooms of housing units, density standard, water supply system, toilet facilities, bathing facilities, type of heating, dwellings by type of building, dwellings by period of construction https://www.stat.ee/sites/default/files/2022-06/Registrip%C3%B5hise%20loenduse%20metoodika%20raport_EN.pdf
<i>Further adjustments made to the survey data:</i> Not applicable.

10.2.2 Tax declarations on payments made to individuals (residents), withheld income tax, funded pension schemes, unemployment insurance, social tax calculated

The detailed information on payments made to individuals (residents), withheld income tax, funded pension schemes, unemployment insurance and social tax calculated is obtained from the Tax and Customs Board. The data are recorded on an accrual basis.

<i>Name of data source:</i> Tax declarations on payments made to individuals (residents), withheld income tax, funded pension schemes, unemployment insurance, social tax calculated
<i>Organisation collecting the data, and purposes for which data are collected:</i> The data are collected by the Tax and Customs Board and used to determine the income tax obligations.
<i>Reporting units:</i> Entrepreneurs registered in the Business Register
<i>Periodicity:</i> Monthly
<i>Variables collected:</i> Withheld income tax, disbursements to employees (rental or lease fees and royalties, interest, payments to funded pension schemes, scholarships, temporary disability benefit, benefits related to accidents at work, etc.)
<i>Methods used to allow for missing data:</i> Complete coverage
<i>Adjustments made for conceptual differences from national accounts concepts:</i> None
<i>Further adjustments made to the data:</i> None

10.2.3 Reports on fringe benefits granted to employees

This source contains data reported to the Estonian Tax and Customs Board by all legal units and sole proprietors about fringe benefits. This report is an annex to the tax declaration of the abovementioned taxpayers. The data are available by institutional sector, by activity and by type of benefits.

<i>Name of data source:</i> Reports on fringe benefits granted to employees
<i>Organisation collecting the data, and purposes for which data are collected:</i> Tax and Customs Board. It is necessary for the indication of income tax and social contributions withheld on income in kind.
<i>Reporting units:</i> Legal units and sole proprietors
<i>Periodicity:</i> Monthly, annual
<i>Main variables collected:</i> Fringe benefits granted to employees (employers' vehicles and property provided for the personal use of employees free of charge or at a discounted rate; education; health promoting services; payments of actual rent; insurance payments, if the law makes no provision for them; goods, services, securities and property rights at a reduced price or free of charge etc.). Income tax and social tax paid on fringe benefits.
<i>Adjustments made for conceptual differences from national accounts concepts:</i> See chapter 4.6
<i>Further adjustments made to the survey data:</i> For value corrections or additions, additional data are used: Estonian Social Survey, Household Budget Survey, Comprehensive Annual Enterprise Report (EKOMAR), public data from the Department of Economic and Environmental Statistics and additional public data about public transport ticket prices. Additionally, the consumer price index is used, which is collected by the Department of Economic and Environmental Statistics.

10.2.4 Estonian Social Survey

The information about the annual income of households from the Estonian Social Survey is used to estimate wages and salaries in kind. The Population and Social Statistics Department of SE is responsible for this survey.

<i>Name of survey:</i> Estonian Social Survey

<i>Link to surveys undertaken at the European level (e.g. structural business statistics):</i> European Union Statistics on Income and Living Conditions (EU-SILC)
<i>Reporting units (e.g. enterprise/ local KAU/ household):</i> Household
<i>Periodicity (e.g. annual/quarterly/other – to be specified):</i> Annual
<i>Time of availability of results (e.g. 18 months after the end of the survey period):</i> Final data and microdata files are published 240 days after the end of the reference year (T + 240).
<i>Sampling frame: (e.g. name of business register used/ population census):</i> Statistical Population Register of Estonia (residents of Estonia). Concerning the SILC instrument, three different sample size definitions can be applied: - the actual sample size which is the number of sampling units selected in the sample – 8,245 households; - the achieved sample size which is the number of observed sampling units (households or individuals) with an accepted interview – 6,467 households and 12,368 persons; - the effective sample size is thus 5,052 households and 9,662 persons. (According to the Commission Regulation (Commission Implementing Regulation (EU) 2019/2242), we use here the design effect of the at-risk-of-poverty rate, which was 1.28).
<i>Survey is compulsory or voluntary?</i> Compulsory
<i>Main features of survey methodology (e.g. PPS sampling/ panel of respondents/ use of a size threshold for sampling/ postal questionnaire/ telephone interview):</i> All households living permanently in Estonia are considered the survey population. Persons living in institutional households (children's homes, care homes, convents, etc.) are excluded. The size of the respective populations has been determined on the basis of the estimated total population provided by Statistics Estonia. Sampling is carried out among the records of the Statistical Population Register, whereas the sampling frame consists of people aged 14 and over. The sampling of persons is carried out by a geographically stratified systematic sampling procedure, i.e. independent sub-samples are drawn separately from the non-overlapping subpopulations called strata. Each person is included with his or her household and all members of this household aged 14 or over are interviewed. The methods used for data collection include personal telephone interviews (CATI) or web interviews (CAWI) which the respondents complete independently. Each household is to be interviewed four times; the rotation period is 12 months, whereas every year part of the sample is replaced. Thus, during the year, the survey is cross-sectional which guarantees higher accuracy of estimates while using the given sample size. The administrative data on income, benefits, pensions and allowances paid received from the Estonian Tax and Customs Board, the Social Insurance Board, the Estonian Health Insurance Fund and the Social Insurance Board are used. Variables and statistical units which were not collected but which are necessary for producing the output are calculated by applying arithmetic conversion to already existing variables. For statistical units, weights are calculated, which are used to expand the data of the sample survey to the total population. The weights are calculated on the basis of design weights derived from inclusion probabilities. The weights, which are first adjusted to compensate for the bias caused by non-response and then calibrated to the population data, are used in calculating the final data. The basis of the calibration is the distribution of the population of Estonia by sex and age group and county on 1 January according to demographic data. Microdata are aggregated to the level necessary for analysis. This includes summation of data according to the classification and calculation of various statistical measures, e.g. average, median, dispersion, etc.
<i>Population size:</i> All households whose usual place of residence is in Estonia, and the members of these households, excluding persons living in institutions (children's homes, care homes, monasteries, convents, etc.)
<i>Sample size:</i> 8,200 households
<i>Survey response rate:</i> The overall response rate is 62% for households interviewed for the first time and 89% for households interviewed for at least the second time.
<i>Method used to impute for missing data:</i> According to the Commission Regulation (Regulation (EU) 2019/1700, Commission Implementing Regulation (EU) 2019/2181), all missing values of income variables should be imputed. As a rule, statistical imputation is the method used for that. In case of within-household non-response, the persons who have not responded are imputed by using a person characterised by similar variables who is selected from among the persons who responded by using the nearest neighbour method.
<i>Variable used for grossing-up to the population (e.g. turnover/ employment):</i> Sex, age group and county on 1 January according to demographic data.
<i>Sample coverage, as % in terms of variable used for grossing-up (e.g. sample covers 60% of employment recorded on the sampling frame):</i> -

<i>Main variables collected:</i> Dwelling and living conditions, health, employment and job search, income, economic well-being, social exclusion, poverty risk, childcare, etc.
<i>Further adjustments made to the survey data:</i> Not applicable

10.3 Statistical surveys and other data sources used for the expenditure approach

All data sources used for the expenditure approach are listed in Table 10.1 above.

One of the most important sources is the SBS survey which is described above in Section 10.1. In addition, the PSFS, PMK and statistical survey of non-profit institutions are described in Section 10.1 above.

10.3.1 Household Budget Survey (HBS)

At present, the most important data source for HFCE estimates is the Household Budget Survey. The HBS data are available at the 7-digit COICOP level.

<i>Name of survey:</i> Household Budget Survey (HBS) [Leibkonna eelarve uuring 2020]
<i>Link to surveys undertaken at the European level (e.g. structural business statistics):</i> Household Budget Survey
<i>Reporting units (e.g. enterprise/ local KAU/ household):</i> Household
<i>Periodicity (e.g. annual/quarterly/other – to be specified):</i> HBS is an irregular survey in Estonia. The survey was conducted annually from 1996 to 2007. In 2008 and 2009 the survey did not take place and some methodological changes were introduced in order to increase the response rate (described in detail below). The survey was conducted again in 2010–2012. In 2015–2016 and 2019–2020, the next rounds of the HBS were conducted in Estonia with the same methodology as in 2010–2012.
<i>Time of availability of results (e.g. 18 months after the end of the survey period):</i> The data are released 125 days after the end of the reference year (T+125).
<i>Sampling frame: (e.g. name of business register used/ population census):</i> Statistical Population Register of Estonia (residents of Estonia)
<i>Survey is compulsory or voluntary?</i> Voluntary
<i>Main features of survey methodology (e.g. PPS sampling/ panel of respondents/ use of a size threshold for sampling/ postal questionnaire/ telephone interview):</i> The survey sample was drawn from among the persons registered in the Population Register who were 15 years of age or older as at 1 January 2020. The person included in the sample (address person) brought his/her household into the sample. Sample persons were drawn from the Statistical Population Register by the stratified unproportional systematic sampling procedure. Single-stage sampling was used. The population is divided into non-overlapping subpopulations or strata, and independent subsamples are drawn separately from every subpopulation following the systematic sampling procedure and by applying different inclusion probabilities. The population was stratified by the county in which the address person had his/her place of residence. The survey was carried out using computer assisted personal interviews (CAPI) or personal telephone interviews (CATI). Substitutions were not allowed. The survey documents were: one questionnaire and one diary book. The survey period, during which the diary books were to be completed, was two weeks.
<i>Population size:</i> 1,315,900
<i>Sample size:</i> 9,448 / without frame error 8,530
<i>Survey response rate:</i> 53%
<i>Method used to impute for missing data:</i> According to the regulation of the European Commission, all missing values of income variables should be imputed. As a rule, statistical imputation is the method used for that. IVEware software operated in the environment of statistical package SAS is used for imputation. This software is based on the sequential regression imputation method. In the case of this method, missing values are not regarded as separate units in the imputation process and are not imputed one after the other, but as an integrated system. Imputation is done by applying multiple sequential regression models, with different types of regression models being varied depending on the type of variable to be imputed.

In the case of the used imputation method, it was necessary to determine for each variable to be imputed which auxiliary variables were to be included in the model in order to generate a new value. For that purpose, the correlation matrix was analysed and the dispersion analysis was carried out. When only single values of a variable are missing, also imputation with the median/average value or hot-deck imputation is used. If an interval of values for the missing value of a single income component or expenditure component is required, first the missing intervals are imputed and then the exact values within each interval. In the HBS, first the missing income intervals were imputed and then the exact values within each interval. In the imputation of intervals, the type of household, number of members, number of employed household members aged 16–24, language used at home, place of residence by region, coping of the household and ownership of a car in the household were used as auxiliary variables. The income variable was imputed by copying the value from a randomly selected household whose income fell into the same interval (hot-deck method). Having analysed the expenditures recorded in the Household Budget Survey questionnaires and diary books and the respective percentages, it was decided to impute the missing diary books by using the nearest neighbour method. For every household without the diary book, a similar donor household was found from among the households who had filled out the diary book. The following variables were used for finding the donor household: type of household, coping, number of employed household members aged 16–24, kind of dwelling, place of residence by region, ownership of a car in the household, and consumption expenditure by type. A household without the diary book was attributed all the same expenditure recorded in the diary book of the donor household.
<i>Variable used for grossing-up to the population (e.g. turnover/ employment):</i> Sex, age group, place of residence
<i>Sample coverage, as % in terms of variable used for grossing-up (e.g. sample covers 60% of employment recorded on the sampling frame):</i> Not applicable for household surveys
<i>Main variables collected:</i> Consumption expenditure: This is the central focus of the survey and refers to how individuals or groups use goods and services to fulfil their needs and wants. Dwelling and living conditions: This includes information about the physical housing and overall living environment. Health: Data related to the physical and mental health status of individuals or households. Employment and job search: Information on employment status, job search efforts, and any related employment activities. Income: Data on the sources and amounts of income earned by individuals or households. Economic well-being: This covers the overall financial and economic security of individuals or households. Self-assessed economic situation: A comparison of households' economic situation now, compared to one year ago and five years ago.
<i>Further adjustments made to the survey data:</i> No further adjustments were made.

In 2021, the HBS was not conducted. Therefore, HFCE estimates are based on the HBS data which are derived using regression models. Forecasts of household expenditures for every quarter at the 4-digit COICOP level were provided by the Population and Social Statistics Department.

Forecasting HBS data during non-survey periods

Task description: The task was to estimate quarterly consumption (per household member) based on a given list of categories, including non-monetary income, and to calculate standard errors and relative errors for all estimates.

Data sources: The primary source for forecasting consumption was time series data of past consumption, available quarterly since 2015 for each required COICOP subcategory (including non-monetary income categories) and necessary subtotals – nearly 200 time series in total. Each series contained 32 data points, depending on the number of quarters since the starting point, some derived from surveys and others forecasted. These time series were updated each quarter with new forecasts.

Another important data source was changes in the Consumer Price Index (CPI) for the same categories (SNA), available both in year-over-year comparisons and relative to base years 2015 and 2020. Additionally, assessments from the Institute of Economic Research regarding consumption trends were used as supplementary qualitative information.

Estimation methodology: To improve accuracy, multiple estimates were used for most indicators:

1. Forecast based on the full time series;
2. Forecast based on data from the specific quarter;
3. Estimate based on SNA changes (using two or three base levels).

Forecasting the next time series value: If a time series had n values, the next $(n+1)$ value was forecasted. Linear and quadratic models were primarily used (occasionally cubic models as well), with model selection based mainly on the coefficient of determination (R^2), supported by visual inspection of model graphs. More complex models were preferred only if they significantly outperformed simpler ones in terms of R^2 .

For forecasts based on the current quarter's data, a time series was constructed from that quarter's data, using the same methodology as for the full series – typically with linear forecasting.

Forecasts based on SNA data followed a standard approach, using different base data for validation.

Averaging forecast components: The final consumption estimate was calculated as a weighted average of the three estimates. Weights were chosen based on the following constraints:

1. Consistency across COICOP hierarchy levels;
2. Consistency with the previous quarter's data (considering background information);
3. Consistency with the same quarter of the previous year (also considering background information).

The forecasts were then checked for coherence with previous periods. If the discrepancies were unreasonably large, the forecasting process was revisited to test alternative models – sometimes visual inspection of model graphs helped.

To confirm the suitability of the final result, the total sum was compared with totals from previous periods. If inconsistencies were found, a more appropriate estimate was selected for the problematic indicator, and all related calculations were adjusted accordingly.

Accuracy assessment: The standard error of the estimate was calculated using standard methods based on the time series forecasting approach (standard deviation of the forecast). The relative error was the ratio of the standard error to the estimate, expressed as a percentage.

The described methodology worked relatively well during periods of stable economic development, as confirmed by time series analysis during transitions between estimates and survey data. However, it was less applicable during periods of rapid economic change (e.g. crises, inflation), when conventional models failed to adequately describe the time series.

10.3.2 Environmental statistics

To estimate HFCE figures, data from three different environmental statistics domains (water use, wastewater treatment and waste balance) are used. The Economic and Environmental Statistics Department of SE is responsible for these statistics.

Information from the water use survey is used to estimate water consumption in the domestic sector.

<i>Name of data source:</i> Water use by county and field of water use
<i>Organisation collecting the data, and purposes for which data are collected:</i> Data about water use are administrative data needed for control over water use. The data are recorded in the Estonian State Water Cadastre database. The Ministry of Climate is the responsible processor of the database whereas the Estonian Environment Agency is the authorised processor. The data are also used for statistical purposes and for reporting to international organisations.
<i>Reporting units:</i> Control over water use and wastewater management is based on the system of environmental permits. Water Permits are necessary starting from a certain quantity of water use. According to the permit, the water user must keep a record of the volume and parameters of the used water. The data are reported by enterprises having Water Permits.
<i>Periodicity:</i> Annual
<i>Variables collected:</i> Total quantity of water used; water used in the domestic sector; water used by industry; water used for energy supply; water used in agriculture; water used for other purposes. The data are collected by counties.
<i>Methods used to allow for missing data:</i> No missing data
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Adjustments are not made.
<i>Further adjustments made to the data:</i> Adjustments are not made.

Information about wastewater treatment is used to estimate sewerage collection.

<i>Name of data source:</i> Wastewater treatment by county
<i>Organisation collecting the data, and purposes for which data are collected:</i> Data about wastewater treatment are administrative data needed for control over water use and wastewater management. The data are recorded in the Estonian State Water Cadastre database. The Ministry of Climate is the responsible processor of the database whereas the Estonian Environment Agency is the authorised processor. The data are also used for statistical purposes and for reporting to international organisations.
<i>Reporting units:</i> Control over water use and wastewater management is based on the system of environmental permits. In the case of legal persons, a Water Permit is necessary if wastewater is discharged to the environment. The data are reported by enterprises having Water Permits.
<i>Periodicity:</i> Annual
<i>Variables collected:</i> Quantity of discharge water; quantity of wastewater needing purification, divided into purified wastewater and non-purified wastewater; quantity of wastewater purified by primary treatment; quantity of wastewater purified by secondary treatment; quantity of wastewater purified by tertiary treatment; quantity of wastewater purified by other unspecified treatment; insufficiently purified wastewater. The data are collected by counties.
<i>Methods used to allow for missing data:</i> No missing data
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Adjustments are not made.
<i>Further adjustments made to the data:</i> Adjustments are not made.

Information about waste is used to estimate refuse collection.

<i>Name of data source:</i> Waste balance by waste categories

<i>Organisation collecting the data, and purposes for which data are collected:</i> All enterprises that have been issued an integrated environmental permit, waste permit or waste management registration certificate have an obligation to submit their annual waste activity report data into the web-based information system administered by the Estonian Environment Agency. The data are used for supervision and regulation of waste management, including landfilling of wastes. The data are also used for statistical purposes and for reporting to international organisations.
<i>Reporting units:</i> All enterprises that have been issued an integrated environmental permit, waste permit or waste management registration certificate.
<i>Periodicity:</i> Annual
<i>Variables collected:</i> Stock of waste at the beginning of the year; incoming, divided into waste generation (including collection) and imports; outgoing, divided into recovery, destruction, disposal in landfills, other treatment and exports; stock at the end of the year. The data are collected according to the most detailed level of the European List of Waste classification.
<i>Methods used to allow for missing data:</i> No missing data
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Adjustments are not made.
<i>Further adjustments made to the data:</i> Adjustments are not made.

10.3.3 Education statistics

Information about enrolled students is used to determine the number of people studying in institutions. Data about students enrolled in all levels of formal education (pre-primary education, general education, vocational education, tertiary education) are collected via a register and are of very high quality. The students are additionally sorted by their level of studies and type of studies.

<i>Name of data source:</i> Estonian Education Information System (EHIS; Eesti Hariduse Infosüsteem in Estonian); source type: register
<i>Organisation collecting the data, and purposes for which data are collected:</i> Ministry of Education and Research, data collected for national needs and for UOE (UNESCO-UIS/ OECD/ Eurostat)
<i>Reporting units:</i> Educational institutions
<i>Periodicity:</i> Once a year
<i>Variables collected:</i> The register is very large and collects a wide range of indicators. However, the sub-register used for students primarily consists of data on enrolments, entrants, and graduates across all educational levels, categorised by sex, age, type of study, field of study, etc.
<i>Methods used to allow for missing data:</i> The data are represented fully.
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Adjustments are not made.
<i>Further adjustments made to the data:</i> Adjustments are not made.

Data about educational expenditures from a survey ("Educational expenditures of private educational institutions") are used to estimate the consumption of educational services for HFCE.

<i>Name of data source:</i> Educational expenditures of private educational institutions
<i>Organisation collecting the data, and purposes for data are collected:</i> Statistics Estonia (responsible unit: Population and Social Statistics Department), data collection for UOE (UNESCO-UIS/ OECD/ Eurostat)
<i>Reporting units:</i> Private educational institutions
<i>Periodicity:</i> Once a year
<i>Variables collected:</i> Educational expenditure by type of education, euros; educational expenditure by source of financing, euros; tuition fees, euros.
<i>Methods used to allow for missing data:</i> Imputation using data from the previous year for which data are available. Usually, this concerns very few private schools.

<i>Adjustments made for conceptual differences from national accounts concepts:</i> Adjustments are not made.
<i>Further adjustments made to the data:</i> Adjustments are not made.

10.3.4 Justice and security statistics about penal institutions

Data about persons incarcerated in penal institutions are used to estimate the number of people living in institutions. Information about persons in penal institutions is obtained from the Statistical Yearbook of Crime in Estonia compiled by the Ministry of Justice.

<i>Name of data source:</i> Crime in Estonia
<i>Organisation collecting the data, and purposes for which data are collected:</i> Prisons Department of the Ministry of Justice
<i>Reporting units:</i> Penal institutions
<i>Periodicity:</i> Annual
<i>Variables collected:</i> Data about persons incarcerated in penal institutions by group of persons (persons under investigation or prosecution; convicted offenders)
<i>Methods used to allow for missing data:</i> Not relevant (complete coverage)
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Adjustments are not made.
<i>Further adjustments made to the data:</i> Adjustments are not made.

10.3.5 Social protection statistics

Information about inmates in social welfare institutions is used to estimate the number of people living in institutions. Data about inmates in social welfare institutions for children and youth are available from the survey of children in alternative care service institutions (from 2007 until 2018, the service was called “substitute home service”). The Data Acquisition and Processing Department of SE is responsible for these surveys.

<i>Name of data source:</i> Children in alternative care service institutions
<i>Organisation collecting the data, and purposes for which data are collected:</i> Ministry of Social Affairs
<i>Reporting units:</i> Social welfare institutions
<i>Periodicity:</i> Once a year
<i>Variables collected:</i> Data about the institutions and inmates
<i>Methods used to allow for missing data:</i> Not relevant (complete coverage)
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Adjustments are not made.
<i>Further adjustments made to the data:</i> Adjustments are not made.

Information about inmates in social welfare institutions for adults is available from the survey of welfare for adults.

<i>Name of data source:</i> Welfare for adults
<i>Organisation collecting the data, and purposes for which data are collected:</i> Ministry of Social Affairs
<i>Reporting units:</i> Social welfare institutions
<i>Periodicity:</i> Once a year
<i>Variables collected:</i> Data about the institutions and inmates
<i>Methods used to allow for missing data:</i> Not relevant (complete coverage)
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Adjustments are not made.
<i>Further adjustments made to the data:</i> Adjustments are not made.

Information about persons in shelters is available from the survey of users of safe house service.

<i>Name of data source:</i> Users of safe house service
<i>Organisation collecting the data, and purposes for which data are collected:</i> Ministry of Social Affairs
<i>Reporting units:</i> Social welfare institutions
<i>Periodicity:</i> Once a year
<i>Variables collected:</i> Data about the institutions and inmates
<i>Methods used to allow for missing data:</i> Not relevant (complete coverage)
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Adjustments are not made.
<i>Further adjustments made to the data:</i> Adjustments are not made.

The data on safe house service have been published since 2016, when the new Social Welfare Act entered into force and the name of the service and its nature changed. The data are not comparable with the data published in 1996–2015 on the shelter service, which was provided to more population groups than the current safe house service. The changes, however, have not been as substantial as to disrupt the time series of tables.

10.3.6 Statistics about compulsory military service

Information about persons in compulsory military service is used to estimate the number of people living in institutions. The number of conscripts is obtained from the annual report of the Defence Resources Agency.

<i>Name of data source:</i> Report on the fulfilment of the national defence service obligations in the country
<i>Organisation collecting the data, and purposes for which data are collected:</i> Defence Resources Agency; the aim is to keep a record of the performance and organisation of the service in the Defence Forces.
<i>Reporting units:</i> Persons liable to national defence obligation
<i>Periodicity:</i> Annual
<i>Variables collected:</i> The report presents important descriptive statistics on service in the Defence Forces in the previous calendar year and outlines the conclusions and necessary important activities planned for the following year.
<i>Methods used to allow for missing data:</i> Not relevant (complete coverage)
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Adjustments are not made.
<i>Further adjustments made to the data:</i> Adjustments are not made.

10.3.7 Statistics about people living in abbeys

Information about people living in abbeys is used to estimate the number of people living in institutions. Data about people living in abbeys are obtained directly from the Ministry of the Interior.

10.3.8 Statistics about travel services

For travel services, a tourist or border sample survey of different groups of visitors is carried out on a regular basis as a joint project of Eesti Pank, Statistics Estonia, the Estonian Tourist Board and market researchers.

The respondents are grouped according to the duration and type of the trip and the country of origin. The duration of the trip and the average expenditures according to the country of

residence are asked in the survey. The following commodity groups of expenditures are available from the surveys: accommodation, catering services, transport, recreation, health, goods (food and industrial goods, incl. alcohol and tobacco, other goods) and other services.

Data about border crossing from the Police and Border Guard Board are also used as initial data.

Travel motivation survey (see the description in Section 10.4) is used to estimate the expenditures of non-residents in Estonia. The survey was also conducted in 2016.

Information from the Household Budget Survey on the travelling of Estonian residents (see the description in Section 10.4) is used to estimate the expenditures of residents abroad.

Data on the total expenditures of residents abroad and non-residents in Estonia are published on the website of Eesti Pank.

10.3.9 Estimates of GFCF on dwellings

The Register of Construction Works is used for estimates of the GFCF on dwellings.

<i>Name of data source:</i> Register of Construction Works
<i>Organisation collecting the data, and purposes for which data are collected:</i> The Register of Construction Works is a state database through which documents related to construction can be submitted and processed.
<i>Reporting units:</i> Legal units and sole proprietors
<i>Periodicity:</i> -
<i>Main variables collected:</i> The number of square metres of housing that has been renovated, built and permitted to be used.
<i>Adjustments made for conceptual differences from national accounts concepts:</i> -
<i>Further adjustments made to the survey data:</i> No information.

10.3.10 Intrastat

Intrastat (Intra EC Trade Statistics) is the trade data collection system between Member States in the European Union (EU). Intrastat reports are the basis of foreign trade statistics.

<i>Name of survey:</i> Intrastat
<i>Link to surveys undertaken at the European level (e.g. structural business statistics):</i> Intrastat Intra-EU trade
<i>Reporting units (e.g. enterprise/ local KAU/ household):</i> Enterprise
<i>Periodicity (e.g. annual/quarterly/other – to be specified):</i> Monthly
<i>Time of availability of results (e.g. 18 months after the end of the survey period):</i> T+40
<i>Sampling frame (e.g. name of business register used/ population census):</i> Business Register
<i>Survey is compulsory or voluntary?</i> Compulsory
<i>Main features of survey methodology (e.g. PPS sampling/ panel of respondents/ use of a size threshold for sampling/ postal questionnaire/ telephone interview):</i> The Intrastat reports should be submitted by enterprises who are registered in the Estonian national VAT register and whose foreign trade turnover exceeds the statistical threshold set for the reporting year.
<i>Population size:</i> Approximately 33,000
<i>Sample size:</i> 7,000
<i>Survey response rate:</i> 89% to 96%

<i>Method used to impute for missing data:</i> Missing data are estimated on 2-digit commodity code and partner country level. Estimations are based on taxation (VAT) data.
<i>Variable used for grossing-up to the population (e.g. turnover/ employment):</i> Threshold with the Intrastat system
<i>Sample coverage, as % in terms of variable used for grossing-up (e.g. sample covers 60% of employment recorded on the sampling frame):</i> 80–96% depending on the commodity section
<i>Main variables collected:</i> Exports and imports of goods
<i>Further adjustments made to the survey data:</i> Additional data sources are used (VAT, VIES, registers for vessels and aircraft).

10.3.11 Extrastat

Extrastat covers the import and export trade with countries outside the European Union. Extrastat data are reflected in customs declarations; companies are not required to submit to Statistics Estonia any additional data on trade with third countries.

<i>Name of survey:</i> Extrastat
<i>Link to surveys undertaken at the European level (e.g. structural business statistics):</i> Extrastat Extra-EU trade
<i>Reporting units (e.g. enterprise/ local KAU/ household):</i> Enterprise
<i>Periodicity (e.g. annual/quarterly/other – to be specified):</i> Monthly
<i>Time of availability of results (e.g. 18 months after the end of the survey period):</i> T+40
<i>Sampling frame (e.g. name of business register used/ population census):</i> Whole
<i>Survey is compulsory or voluntary?</i> Compulsory
<i>Main features of survey methodology (e.g. PPS sampling/ panel of respondents/ use of a size threshold for sampling/ postal questionnaire/ telephone interview):</i> Extrastat data are based on customs declarations and contain practically all of the information on trade with non-EU countries (so-called third countries). There are no data losses caused by non-response or by other issues.
<i>Population size:</i> Approximately 60,000
<i>Sample size:</i> -
<i>Survey response rate:</i> 100%
<i>Method used to impute for missing data:</i> There are no data losses.
<i>Variable used for grossing-up to the population (e.g. turnover/ employment):</i> -
<i>Sample coverage, as % in terms of variable used for grossing-up (e.g. sample covers 60% of employment recorded on the sampling frame):</i> 100%
<i>Main variables collected:</i> Exports and imports of goods
<i>Further adjustments made to the survey data:</i> Additional data sources are used for goods which are not subject to customs clearance (statistical survey for fish caught in foreign waters).

10.3.12 Balance of Payments statistics

This includes surveys conducted by Eesti Pank for compiling the BOP:

<i>Name of survey:</i> Manufacturing or non-financial services companies (Form E)
<i>Link to surveys undertaken at the European level:</i> -
<i>Reporting units:</i> Enterprise
<i>Periodicity:</i> Quarterly
<i>Time of availability of results:</i> t+70
<i>Sampling frame:</i> Business Register of Estonia
<i>Survey is compulsory or voluntary?</i> Compulsory
<i>Main features of survey methodology:</i> Cut off the tail
<i>Population size:</i> Approximately 224,000

<i>Name of survey:</i> Manufacturing or non-financial services companies (Form E)
<i>Sample size:</i> At the end of the year: 2,316
<i>Survey response rate:</i> 92–98%
<i>Method used to impute for missing data:</i> Missing data are replaced either by actual transactions of the ITRS or by an average report from previous period(s).
<i>Variable used for grossing-up to the population:</i> Grossing-up in accordance with the ITRS register
<i>Sample coverage, as % in terms of variable used for grossing-up:</i> 80–95%, depending on the BOP item
<i>Main variables collected:</i> All BOP components for current, capital and financial accounts, except exports and imports of goods covered by the foreign trade in goods database and exports and imports of services covered by the foreign trade in services database
<i>Further adjustments made to the survey data:</i> Additional data sources are used.

<i>Name of survey:</i> Transportation companies (Form T)
<i>Link to surveys undertaken at the European level:</i> -
<i>Reporting units:</i> Enterprise
<i>Periodicity:</i> Quarterly
<i>Time of availability of results:</i> t+70
<i>Sampling frame:</i> Business Register of Estonia
<i>Survey is compulsory or voluntary?</i> Compulsory
<i>Main features of survey methodology:</i> Cut off the tail
<i>Population size:</i> Approximately 8,400
<i>Sample size:</i> At the end of the year: 292
<i>Survey response rate:</i> 95–99%
<i>Method used to impute for missing data:</i> Missing data are replaced either by actual transactions of the ITRS or by an average report from previous period(s).
<i>Variable used for grossing-up to the population:</i> Grossing-up in accordance with the ITRS register
<i>Sample coverage, as % in terms of variable used for grossing-up:</i> 80–95%, depending on the BOP item
<i>Main variables collected:</i> All BOP components for current, capital and financial accounts, except exports and imports of goods covered by the foreign trade database and exports and imports of services
<i>Further adjustments made to the survey data:</i> Additional data sources are used.

<i>Name of survey:</i> Insurance companies (Form K)
<i>Link to surveys undertaken at the European level:</i> -
<i>Reporting units:</i> Enterprise
<i>Periodicity:</i> Quarterly
<i>Time of availability of results:</i> t+70
<i>Sampling frame:</i> All insurance companies
<i>Survey is compulsory or voluntary?</i> Compulsory
<i>Main features of survey methodology:</i> Census
<i>Population size:</i> 23
<i>Sample size:</i> 23
<i>Survey response rate:</i> 100%
<i>Method used to impute for missing data:</i> -
<i>Variable used for grossing-up to the population:</i> -
<i>Sample coverage, as % in terms of variable used for grossing-up:</i> 100%

<i>Name of survey:</i> Insurance companies (Form K)
<i>Main variables collected:</i> Cross-border insurance premiums, claims and commissions and foreign assets and liabilities (incl. assets and liabilities arising from reinsurance)
<i>Further adjustments made to the survey data:</i> Additional data sources are used to estimate BOP components.

<i>Name of survey:</i> Statistical survey of credit institutions
<i>Link to surveys undertaken at the European level:</i> -
<i>Reporting units:</i> Credit institutions
<i>Periodicity:</i> Monthly, quarterly
<i>Time of availability of results:</i> T+10, T+30
<i>Sampling frame:</i> All credit institutions
<i>Survey is compulsory or voluntary?</i> Compulsory
<i>Main features of survey methodology:</i> Census
<i>Population size:</i> At the end of the year: 14
<i>Sample size:</i> 14
<i>Survey response rate:</i> 100%
<i>Method used to impute for missing data:</i> -
<i>Variable used for grossing-up to the population:</i> -
<i>Sample coverage, as % in terms of variable used for grossing-up:</i> -
<i>Main variables collected:</i> All BOP components for current, capital and financial accounts, except exports and imports of goods covered by the foreign trade database
<i>Further adjustments made to the survey data:</i> -

<i>Name of survey:</i> BOP survey for Eesti Pank
<i>Link to surveys undertaken at the European level:</i> -
<i>Reporting units:</i> Eesti Pank
<i>Periodicity:</i> Monthly
<i>Time of availability of results:</i> T+5
<i>Sampling frame:</i> Eesti Pank
<i>Survey is compulsory or voluntary?</i> Compulsory
<i>Main features of survey methodology:</i> Census
<i>Population size:</i> 1
<i>Sample size:</i> 1
<i>Survey response rate:</i> 100%
<i>Method used to impute for missing data:</i> -
<i>Variable used for grossing-up to the population:</i> -
<i>Sample coverage, as % in terms of variable used for grossing-up:</i> -
<i>Main variables collected:</i> All BOP components for current, capital and financial accounts, except exports and imports of goods covered by the foreign trade database
<i>Further adjustments made to the survey data:</i> -

<i>Name of survey:</i> International Transactions Reporting System (ITRS)
<i>Link to surveys undertaken at the European level:</i> -
<i>Reporting units:</i> Credit institutions on behalf of their customers
<i>Periodicity:</i> Monthly

<i>Name of survey:</i> International Transactions Reporting System (ITRS)
<i>Time of availability of results:</i> t+7 banking days
<i>Sampling frame:</i> Cross-border payments of all private and legal persons in Estonia
<i>Survey is compulsory or voluntary?</i> Compulsory
<i>Main features of survey methodology:</i> Census
<i>Population size:</i> All private and legal persons in Estonia as customers of banks
<i>Sample size:</i> -
<i>Survey response rate:</i> 100%
<i>Method used to impute for missing data:</i> -
<i>Variable used for grossing-up to the population:</i> -
<i>Sample coverage, as % in terms of variable used for grossing-up:</i> 90–95%
<i>Main variables collected:</i> All cross-border transactions above the exemption threshold (10,000 EUR)
<i>Further adjustments made to the survey data:</i> -

10.3.13 Foreign trade in services

Survey is conducted by Statistics Estonia in cooperation with Eesti Pank for compiling the BOP and ITSS

<i>Name of survey:</i> Foreign trade in services
<i>Link to surveys undertaken at the European level (e.g. structural business statistics):</i> None
<i>Reporting units (e.g. enterprise/ local KAU/ household):</i> Enterprise
<i>Periodicity (e.g. annual/quarterly/other – to be specified):</i> Quarterly
<i>Time of availability of results (e.g. 18 months after the end of the survey period):</i> T+70
<i>Sampling frame (e.g. name of business register used/ population census):</i> Business Register
<i>Survey is compulsory or voluntary?</i> Compulsory
<i>Main features of survey methodology (e.g. PPS sampling/ panel of respondents/ use of a size threshold for sampling/ postal questionnaire/ telephone interview):</i> Questionnaire should be submitted by enterprises who are registered in the Business Register and whose turnover of exports or imports of services exceeds the statistical threshold set for the reporting year.
<i>Population size:</i> Approximately 80,000
<i>Sample size:</i> 5,700
<i>Survey response rate:</i> 77% to 79%
<i>Method used to impute for missing data:</i> Statistics Estonia estimates intra-EU non-response for entities that are in sample based on VIES data and NACE. Eesti Pank estimates intra-EU data for entities which are not in the sample and extra-EU data (both for non-response and units not in sample) based on ITRS data.
<i>Variable used for grossing-up to the population (e.g. turnover/ employment):</i> grossing-up in accordance with VIES and ITRS values.
<i>Sample coverage, as % in terms of variable used for grossing-up (e.g. sample covers 60% of employment recorded on the sampling frame):</i> 96–98%
<i>Main variables collected:</i> Exports and imports of services by code of service and partner country
<i>Further adjustments made to the survey data:</i> Additional data sources are used (VIES, ITRS).

10.4 Statistical surveys and other data sources used for the transition from GDP to GNI

The main data sources used for the transition from GDP to GNI are described in Chapter 8.

Other important data sources used for compiling the BOP are listed below.

<i>Name of data source:</i> Public Sector Financial Statements system
<i>Organisation collecting the data, and purposes for which data are collected:</i> Ministry of Finance, Statistics Estonia
<i>Reporting units:</i> Government sector entities
<i>Periodicity:</i> Quarterly
<i>Variables collected:</i> Government sector entities' transactions and positions with non-residents
<i>Methods used to allow for missing data:</i> -
<i>Further adjustments made to the data:</i> -

<i>Name of data source:</i> Foreign trade in goods database (ITGS)
<i>Organisation collecting the data, and purposes for which data are collected:</i> Statistics Estonia
<i>Reporting units:</i> Enterprise
<i>Periodicity:</i> Monthly
<i>Variables collected:</i> Exports and imports of goods
<i>Methods used to allow for missing data:</i> -
<i>Further adjustments made to the data:</i> Additional data sources (e.g. OSS) are used to estimate missing data.

<i>Name of data source:</i> Foreign trade in services database (ITSS)
<i>Organisation collecting the data, and purposes for which data are collected:</i> Statistics Estonia
<i>Reporting units:</i> Enterprise
<i>Periodicity:</i> Quarterly
<i>Variables collected:</i> Exports and imports of services
<i>Methods used to allow for missing data:</i> -
<i>Further adjustments made to the data:</i> Additional data sources (e.g. ITRS, OSS) are used to estimate missing data.

<i>Name of data source:</i> Investment funds' reports
<i>Organisation collecting the data, and purposes for which data are collected:</i> Financial Supervision and Resolution Authority
<i>Reporting units:</i> Investment funds
<i>Periodicity:</i> Monthly
<i>Variables collected:</i> Investment funds' transactions and positions
<i>Methods used to allow for missing data:</i> -
<i>Further adjustments made to the data:</i> -

<i>Name of data source:</i> Estonian Securities Register (Nasdaq)
<i>Organisation collecting the data, and purposes for which data are collected:</i> Nasdaq CSD S&S Estonian branch
<i>Reporting units:</i> Enterprise
<i>Periodicity:</i> Monthly

<i>Variables collected:</i> Statistics on securities issues registered in the register, including data on current ownership, market prices, interest/dividends payable etc.
<i>Methods used to allow for missing data:</i> -
<i>Further adjustments made to the data:</i> -

<i>Name of data source:</i> Business Register of Estonia
<i>Organisation collecting the data, and purposes for which data are collected:</i> Ministry of Justice, Centre of Registers
<i>Reporting units:</i> Enterprise
<i>Periodicity:</i> Monthly
<i>Variables collected:</i> Monthly updates on the register of legal entities, their owners, and the main audited annual economic indicators
<i>Methods used to allow for missing data:</i> -
<i>Further adjustments made to the data:</i> -

<i>Name of data source:</i> Tax and Customs Board
<i>Organisation collecting the data, and purposes for which data are collected:</i> Tax and Customs Board
<i>Reporting units:</i> Private and legal persons
<i>Periodicity:</i> Quarterly, annual
<i>Variables collected:</i> Data on taxes and social security contributions; income statements of private individuals; distributed income of corporations
<i>Methods used to allow for missing data:</i> -
<i>Further adjustments made to the data:</i> -

<i>Name of data source:</i> MOSS (Mini One Stop Shop), from 1 July 2021 OSS (One Stop Shop)
<i>Organisation collecting the data, and purposes for which data are collected:</i> Tax and Customs Board
<i>Reporting units:</i> Private and legal persons
<i>Periodicity:</i> Quarterly
<i>Variables collected:</i> Data on purchase/sale of telecommunications, broadcasting, information and other services between Estonian residents and non-residents; data on purchase/sale of goods (not covered by the foreign trade database)
<i>Methods used to allow for missing data:</i> -
<i>Further adjustments made to the data:</i> -

<i>Name of data source:</i> OÜ Positium
<i>Organisation collecting the data, and purposes for which data are collected:</i> OÜ Positium, under an outsourcing agreement for data processing
<i>Reporting units:</i> Mobile network operators
<i>Periodicity:</i> Monthly
<i>Variables collected:</i> Data based on roaming activities of mobile phone traffic positioning services, indicating the number of non-residents' visits to Estonia and residents' visits abroad by country
<i>Methods used to allow for missing data:</i> Methodology developed by OÜ Positium (Tartu University) and Eesti Pank
<i>Further adjustments made to the data:</i> The data are validated by Eesti Pank.

<i>Name of data source:</i> Centralised Securities Database of the European System of Central Banks (ESCB)
<i>Organisation collecting the data, and purposes for which data are collected:</i> ESCB
<i>Reporting units:</i> Central banks, commercial data providers
<i>Periodicity:</i> Monthly
<i>Variables collected:</i> Statistics on securities
<i>Methods used to allow for missing data:</i> Some defaulting rules
<i>Further adjustments made to the data:</i> -

<i>Name of data source:</i> Estonian Labour Force Survey
<i>Organisation collecting the data, and purposes for which data are collected:</i> Statistics Estonia
<i>Reporting units:</i> Households
<i>Periodicity:</i> Quarterly
<i>Variables collected:</i> Number of private persons working abroad by country and activity
<i>Methods used to allow for missing data:</i> -
<i>Further adjustments made to the data:</i> -

<i>Name of data source:</i> Border crossings statistics
<i>Organisation collecting the data, and purposes for which data are collected:</i> Statistics Estonia
<i>Reporting units:</i> Police and Border Guard Board
<i>Periodicity:</i> Monthly
<i>Variables collected:</i> Number of border crossings
<i>Methods used to allow for missing data:</i> -
<i>Further adjustments made to the data:</i> -

<i>Name of data source:</i> Travel motivation survey
<i>Organisation collecting the data, and purposes for which data are collected:</i> Statistics Estonia, for determining expenditure on inbound trips of non-residents by main purpose of trip (from 2024 onwards, the data are collected by the Estonian Business and Innovation Agency)
<i>Reporting units:</i> Private persons
<i>Periodicity:</i> 2009, 2014, 2015, 2016, 2024
<i>Variables collected:</i> Tourists' expenditures in Estonia
<i>Methods used to allow for missing data:</i> -
<i>Further adjustments made to the data:</i> -

<i>Name of data source:</i> Household Budget Survey (data on expenditure by outbound tourists)
<i>Organisation collecting the data, and purposes for which data are collected:</i> Statistics Estonia, for determining expenditure on outbound trips of Estonian residents by main purpose of trip
<i>Reporting units:</i> Private persons
<i>Periodicity:</i> Quarterly, annual
<i>Variables collected:</i> Estonian tourists' expenditure abroad
<i>Methods used to allow for missing data:</i> -
<i>Further adjustments made to the data:</i> -

<i>Name of data source:</i> Accommodation statistics
<i>Organisation collecting the data, and purposes for which data are collected:</i> Statistics Estonia
<i>Reporting units:</i> Enterprises
<i>Periodicity:</i> Monthly
<i>Variables collected:</i> Number of tourists staying in hotels
<i>Methods used to allow for missing data:</i> -
<i>Further adjustments made to the data:</i> -

<i>Name of data source:</i> State Guarantee Fund
<i>Organisation collecting the data, and purposes for which data are collected:</i> Eesti Pank
<i>Reporting units:</i> Enterprise
<i>Periodicity:</i> Monthly
<i>Variables collected:</i> For securities: ISIN, date, volume; for deposits: country, maturity, currency, value
<i>Methods used to allow for missing data:</i> -
<i>Further adjustments made to the data:</i> -

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List of Abbreviations

Abbreviation	Full name
ARIB	Estonian Agricultural Registers and Information Board
BOP	Balance of Payments
BPM6	IMF Balance of Payments and International Investment Position Manual 6th Edition
CFC	Consumption of fixed capital
CIF	Cost, insurance and freight
COFOG	Classification of the Functions of the Government
COICOP	Classification of Individual Consumption by Purpose
CPA	Statistical Classification of Products by Activity in the European Economic Community
EAA	Economic accounts for agriculture
EFSRA	Estonian Financial Supervision and Resolution Authority
EIER	Estonian Institute of Economic Research
ERA	Estonian Road Administration
ESA 2010	European System of Accounts 2010
ESS	Estonian Social Survey
ETCB	Estonian Tax and Customs Board
EU	European Union
FDI	Foreign direct investment
FIE	Unincorporated enterprise owned by households or sole proprietor, Estonian acronym
FISIM	Financial Intermediation Services Indirectly Measured
FOB	Free on board
ITGS	International Trade in Goods Statistics
GDP	Gross domestic product
GFCF	Gross fixed capital formation
GG	General government
GNI	Gross national income
HBS	Household Budget Survey
HFCE	Household final consumption expenditure
HG	Holding gains
IC	Intermediate consumption
IIP	International investment position
ITRS	International Transaction Reporting System
LFS	Labour Force Survey
LU	Legal unit
MGDD	Manual on Government Deficit and Debt
MMF	Money market funds
MNE	Multi-National Enterprise
NA	National Accounts
NACE	Statistical classification of Economic activities in the European Community

Abbreviation	Full name
NPIs	Non-profit institutions
NPISH	Non-profit institutions serving households
OSPA	Estonian Oil Stockpiling Agency
PHC	Population and Housing Census
PIM	Perpetual inventory method
PMK	Economic indicators of agricultural, forestry and fishing enterprises survey, Estonian acronym
PRIA	Estonian Agricultural Registers and Information Board, Estonian acronym
PSFS	Public sector financial statements
R&D	Research and development
RT	Retail trade
SBR	Estonian Statistical Business Register
SBS	Structural Business Statistics
SE	Statistics Estonia
SNA	System of National Accounts
SP	Statistical Profile
SPEs	Special Purpose Entities
SSSC	State Shared Services Centre
SUT	Supply-use tables
VAT	Value added tax

ANNEX A. GNI Process tables

ANNEX B. Supply and Use tables