

Statistical Service of Cyprus



CYPRUS GROSS NATIONAL INCOME INVENTORY 2017

**Methodology for the calculation of Gross Domestic Product
and Gross National Income in Cyprus**

Nicosia

December 2021

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PREFACE

This revised Gross National Income (GNI) Inventory with reference year 2017 is an updated and more exhaustive version of the GNI Inventory 2010 that was submitted to Eurostat in December 2019.

The GNI Inventory describes the methods and sources used for the calculation of the Gross Domestic Product and Gross National Income of Cyprus within the government controlled area, excluding the part of the island occupied by Turkish troops since the invasion of 1974.

The GNI Inventory fulfils the requirement laid down in Article 3 of the Regulation (EU) 2019/516 on the harmonisation of Gross National Income (GNI) at market prices, which stipulates for the provision of an inventory on the procedures and basic statistics used to calculate GNI and its components.

In conformity with the above Regulation, the currently applicable definitions, concepts and classifications are in compliance with Regulation (EU) No 549/2013 on the European system of national and regional accounts (ESA 2010). This description of methods is intended to be used exclusively for the purposes of the GNI Committee and is not for publication or transmission to third parties. It is intended solely for internal official use by the members of the GNI Expert Group.

The GNI Inventory was compiled by the staff of the National Accounts and Government Finance Statistics division of CYSTAT, under the guidance and supervision of Mr Vasilis Hailos, Head of the division. Special thanks should be attributed to all the statistical officers of CYSTAT and to Ms Eleni Nicolaou of the Central Bank of Cyprus, who made valuable contributions to the writing of the GNI Inventory and offered their assistance to the NA officers whenever required. The National Accounts team is composed of the following:

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Nicosia, December 2021

CHAPTER 1: OVERVIEW OF THE SYSTEM OF ACCOUNTS

1.1 Introduction

1.1.1 Main approaches to GDP and geographical coverage

Main approaches to GDP

In Cyprus the annual estimates of Gross Domestic Product (GDP) are obtained from the production, expenditure and income approaches. The Supply and Use framework currently provides reconciliation between production and expenditure approaches, which are the two independent approaches. Net factor income from the Rest of the World is added to the GDP in order to derive estimates at Gross National Income (GNI).

The current definitions, concepts and classifications used are in compliance with Regulation (EU) No 549/2013 on the European system of national and regional accounts in the European Union (ESA 2010). This Regulation was fully implemented by the Statistical Service of Cyprus (CYSTAT) in the September 2014 major revision.

In the Cyprus National Accounts (NA) system, the production and expenditure approaches determine the level of GDP and GNI. This applies not only to the annual and quarterly data at current prices but also to the corresponding GDP results at chain-linked prices and previous year prices.

As third method the income approach aggregates are compiled. At this stage, however, GDP and GNI cannot be calculated on the basis of the income side independently, since the gross operating surplus is estimated as a residual item. Nevertheless, even the partial compilation of the income approach helps to a certain extent on the macro level in the authentication of GDP and GNI.

Detailed information on the supply and use of goods and services forms the basis of the input-output framework. A product-by-product (CPA 2008) balancing process, based on Supply and Use Tables (SUT), provides important indications regarding the consistency of the production and expenditure aggregates.

Institutional sector accounts provide supplementary information for institutionally orientated users and at the same time they serve as the basis for a comparison with the financial sector accounts which are also compiled by the National Accounts and Government Finance Statistics division.

Geographical coverage

Following the Turkish invasion in Cyprus in July 1974 and the subsequent occupation of nearly 40% of its territory, the calculations of GDP and GNI refer to the government-controlled areas of the island. The economic territory covered is in line with the provisions of ESA 2010 §2.05-2.07 and the Commission Regulation 109/2005 on the definition of the economic territory of Member States for the purposes of the GNI Regulation. Specifically, the economic territory consists of the following:

- the geographic territory under the effective administration and economic control of a single government;
- any free zones, including bonded warehouses and factories under customs control;
- the national air-space, territorial waters and the continental shelf lying in international waters, over which the country enjoys exclusive rights;
- territorial enclaves, these being geographic territories situated in the rest of the world and used, under international treaties or agreements between states, by general government agencies of the country (such as embassies, consulates, etc.);
- deposits of oil, natural gas, etc. in international waters outside the continental shelf of the country, worked by units resident in the territory.

Cyprus, being classified as one region (NUTS I level), is exempted from the obligation of compiling regional accounts.

1.1.2 Organisation and responsibilities within the NSI

CYSTAT is a highly centralised National Statistical Institute (NSI), with all divisions under one roof, and it undertakes most of the statistical collections. The main external organisations from which data is collected in a compiled or extensively processed form are the Central Bank of Cyprus and the Ministry of Finance.

The Official Statistics Law of 2021 (Law No. 25(I)/2021) provides the legal basis for the development, production and dissemination of official statistics in Cyprus. This law replaces and repeals the Statistics Law of 2000 (Law No. 15(I)/2000). The purpose of the new Law, which entered into force on the 18th March 2021, is to review and modernise the legislation governing the development, production and dissemination of official statistics. Its provisions are also in line with Regulation (EC) No. 223/2009 on European Statistics, with an emphasis on its latest amendment by Regulation (EU) 2015/759.

The new law also attempted to include recommendations that were highlighted during the peer review process of the national statistical system, conducted in Cyprus in March 2015.

The main new provisions of the Official Statistics Law of 2021 relate to:

(a) streamlining the national statistical system, which includes, in addition to the Statistical Service, the ministries, departments and services or legal persons of public law (hereinafter referred to as "other national authorities") that produce European statistics on the basis of EU legislation and submit them to Eurostat;

(b) strengthening the coordinating role of the Statistical Service within the national statistical system and delegating specific responsibilities to the Director of the Statistical Service;

(c) the appointment of an official in charge of official statistics in the other national authorities, who will be responsible for implementing the provisions of the law, in particular with regard to the application of the statistical principles and the assurance of the quality of statistics;

(d) setting up a Committee on Coordination of Official Statistics;

(e) the amendment of the composition of the Statistical Council in order to achieve a more balanced representation of the various stakeholders;

(f) shaping the framework for cooperation with the Central Bank;

(g) defining the statistical quality criteria which should govern the data produced in order to ensure public trust in statistics, in accordance with the European Statistics Code of Practice;

(h) strengthening the mandate regarding access to and use of administrative records for statistical purposes;

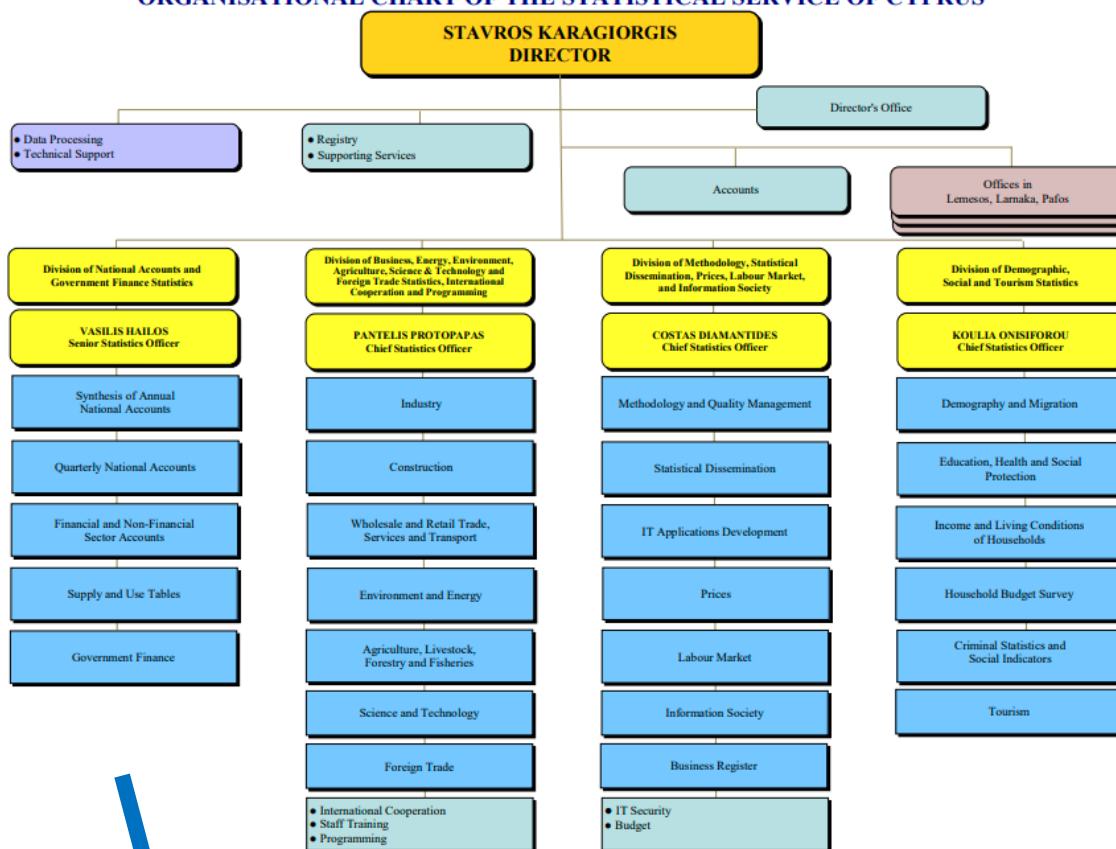
(i) improving provisions regarding data collection (provision of data for statistical purposes remains mandatory) and the protection of confidential data;

(j) respecting the provisions of Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data (General Data Protection Regulation) in all stages of collection, processing and dissemination of statistical data;

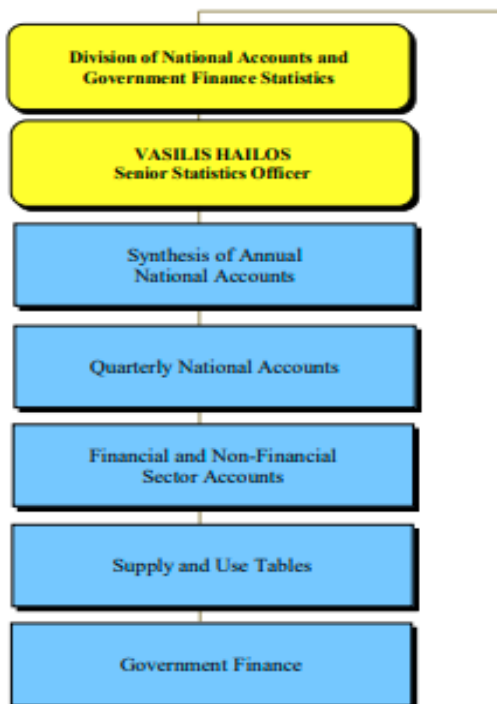
(k) updating the provisions relating to offences and penalties.

CYSTAT organisation structure was reviewed in 2020 and the updated chart is presented below:

ORGANISATIONAL CHART OF THE STATISTICAL SERVICE OF CYPRUS



- M a y 2 0 2 0 -



CYSTAT is organised in 4 main Divisions and 3 supporting sections, as follows:

Divisions

- National Accounts and Government Finance Statistics
- Business Statistics, Energy, Environment, Agriculture, Science and Technology, Foreign Trade Statistics, International Cooperation and Programming
- Methodology, Statistical Dissemination, Prices, Labour Market and Information Society
- Demography, Social and Tourism Statistics

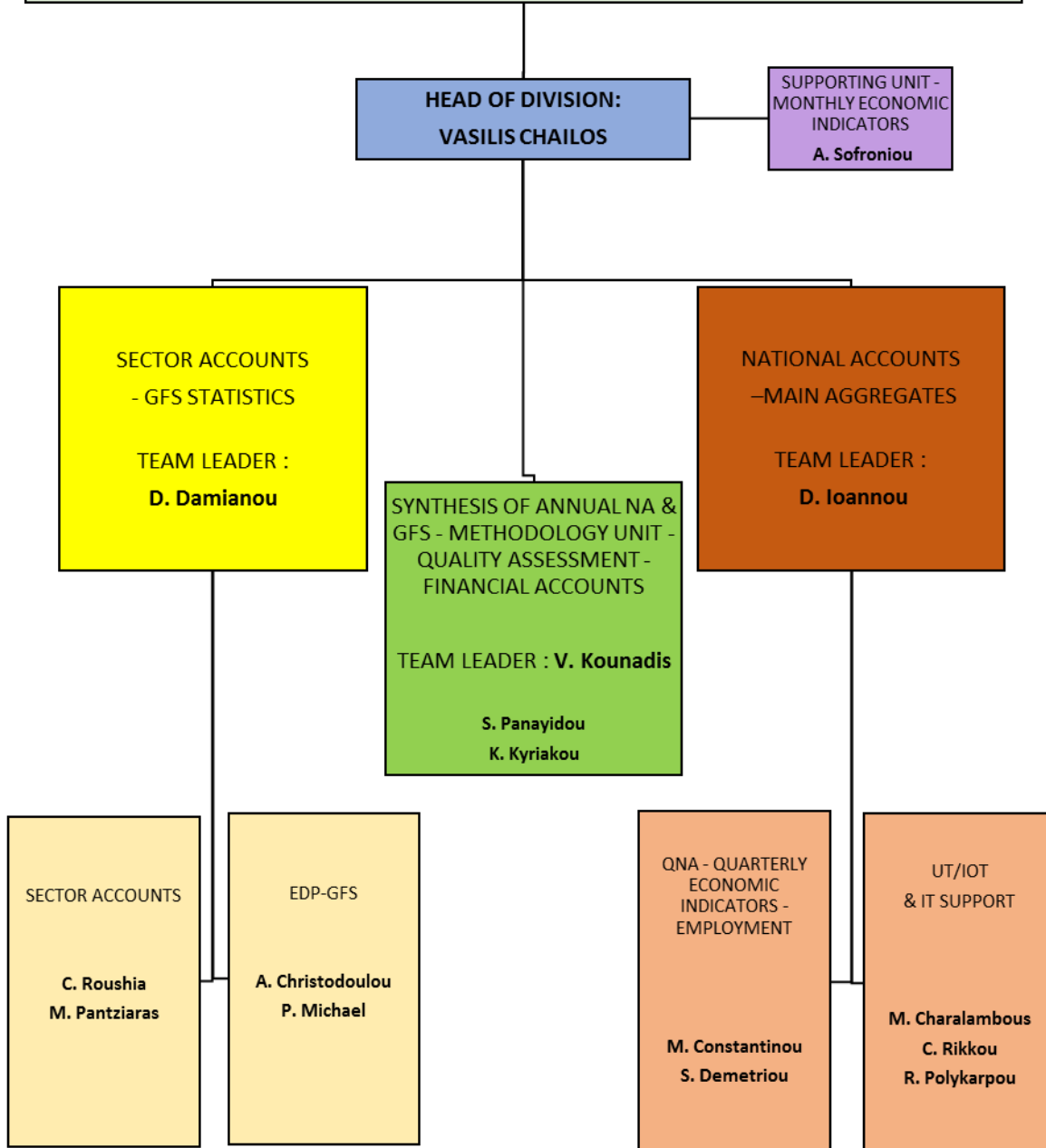
Supporting sections

- Data Processing and Technical Support
- Registry
- Accounts

CYSTAT currently employs 153 full-time employees, as well as around 75 part-time employees, who are engaged in conducting various inventories and sampling surveys, mainly for data collection.

The NA data is compiled by the National Accounts and Government Finance Statistics division of CYSTAT. It consists of 16 staff members, namely 14 permanent statistical officers and 2 permanent statistical assistants. Due to the relatively small size of the division, all statistical officers are involved in multiple tasks in order to satisfy the demanding requirements at national and European level. It should be stressed that the NA and GFS division has been reinforced compared to the previous years to accomplish the planned action for improvement of the previous cycle. The chart below presents the division structure:

**NATIONAL ACCOUNTS AND GOVERNMENT FINANCE STATISTICS
DIVISION**
DIVISION STRUCTURE



The main tasks of the NA and GFS division cover the following:

- Synthesis of annual and quarterly national accounts (current prices, chain-linked and previous year prices)
- Supply and Use tables (current prices and previous year prices) and symmetric Input / Output tables
- Government Finance Statistics and Excessive Deficit Procedure
- Non-financial and financial sector accounts (annual and quarterly)
- Employment statistics
- Short-term economic indicators
- Methodology and Quality assessment

1.1.3 Supervisory and control systems

Statistical Council

In Cyprus the supervisor of CYSTAT is the Statistical Council (CS). It is an independent board, standing alone both from the Cyprus government and CYSTAT. The Statistical Council gives its opinion and submits suggestions with regard to the preparation, implementation and further development of the programmes of statistical activities and advises the Director and the statistical heads of other national authorities on issues relating to the statistical principles provided in article 4 of the Statistics Law of 2021. The twelve members of the CS are representatives from social, scientific and governmental organisations.

Quality Management and Methodology Unit

In recent years CYSTAT established a Quality Management and Methodology Unit (MQMU) with an aim to standardize methods and procedures followed in the statistical production process.

The main duties of the MQMU involve the administration of the Business Register, the development of electronic and web questionnaires with the Blaise system for all household surveys and a large number of business and agricultural surveys, classifications, the adoption of the SDMX standard, monitoring the production of quality reports according to European standards, supporting the use of the ESS-MH tool and sampling for household, business and agricultural surveys. Additionally, the Unit provides support on various methodological issues, such as the imputation of missing values, the calculation of weights, calibration weights, coefficients of variation and other measures of accuracy, etc.

The unit is also in charge of “horizontal” projects affecting the quality and efficiency of statistical processes, such as the documentation of statistical processes followed in the production of statistics, issuing quality guidelines, documenting the use of administrative data, identifying new administrative sources and acquiring and managing administrative data files, the creation of a statistical data warehouse at CYSTAT and others.

Learning Unit

The role of the Learning Unit in CYSTAT is mainly the diagnosis of staff learning needs related to their work, subsequently, the implementation of appropriate training programmes locally or abroad and, finally, the assessment of these programmes.

Production of Quality Reports

The most important Quality Reports that are relevant for NA purposes are the ones for Structural Business Statistics. According to Regulation (EC) No 295/2008 of the European Parliament and of the Council and its amendments, detailed modules should be prepared for the activities of Industry, Construction, Trade and Services. The two most important quality indicators are the Coefficient of Variation and the non-response rate. The time series is complete from 2000 onwards.

Quality reports are produced and delivered to Eurostat using the ESS Metadata Handler Online Tool, according to deadlines set. Apart from this, every publication of SBS data on CYSTAT’s website is accompanied with metadata information describing the sources and methods used, like sampling design, classification, definitions of variables etc.

Committee on Large Enterprises and MNEs

In Cyprus no stand-alone Large Cases Unit (LCU) has been established but instead a committee constituting experts from business and macro-economic statistics has been set up and has been tasked with coordinating activities on large enterprises and MNEs.

European Statistics Code of Practice and Peer Review

The basic principles for the production and dissemination of European official statistics and the institutional environment, under which the members of ESS operate, are included in the European Statistics Code of Practice. The European Statistics Code of Practice (ES CoP) was adopted by the Statistical Programme Committee (SPC) on 24 February 2005 and was reviewed by the European Statistical System Committee (ESSC) in September 2011 and afterwards, in November 2017.

The ES CoP sets out 16 key principles, which refer to professional independence, coordination and cooperation, mandate for data collection and access to data, adequacy of resources, commitment to quality, statistical confidentiality and data protection, impartiality and objectivity, sound methodology, appropriate statistical procedures, non-excessive burden on respondents, cost effectiveness, relevance, accuracy and reliability, timelines and punctuality, coherence and comparability, accessibility and clarity.

The main mechanism for monitoring the implementation of the ES CoP is the ESS peer reviews. Their objective is to review the compliance/alignment of the ESS with the CoP and to help the statistical authorities making up the ESS to further improve and develop the national statistical systems.

In Cyprus, the first round took place in December 2006 and the second round in March 2015. The third round is planned to take place in March 2023. With the completion of the second peer review a list of improvement actions (IA) was compiled, on the basis of the conclusions of the evaluation carried out by the peer reviewers. The Peer Review Reports as well as the improvement actions for each country

can be accessed at Eurostat's website at the following link:

<http://ec.europa.eu/eurostat/web/quality/peer-reviews>

The monitoring of the implementation of IA's is carried out on annual basis by Eurostat. Specifically, towards the end of each year, a questionnaire is sent out to members of the ESS, requesting them to report on the progress achieved for each specific IA. In addition to this, Eurostat prepares an annual monitoring report by member-state, summarizing the progress achieved in the previous year. The monitoring reports are presented to ESSC meetings once a year (May). CYSTAT considers the peer review exercises, as an essential part of its quality management system.

IT Security Officer

As of 28 February, 2017, an IT Security Officer was appointed at CYSTAT. The main duties of the IT Security Officer involve, among others, the following:

- Compiling, updating, implementing and monitoring IT security policies regarding information systems at CYSTAT.
- Identifying areas of weakness regarding IT security that could lead to loss of data.
- Carrying out risk assessment studies for projects that may possibly affect the safety/security of informational systems at CYSTAT.
- Evaluating and adjusting security policies according to CYSTAT needs.

- Carrying out studies regarding the correct implementation of IT security policies.
- Handling incidents where IT security policies have been violated or where loss of data has occurred.
- Continuous update and compliance to legislation relevant to the protection of data kept at CYSTAT.
- Continuous update regarding risks/threats/vulnerabilities that may affect CYSTAT's information systems.
- Training of CYSTAT staff regarding IT security issues, policies, etc.
- Implementing the ESS IT Security Framework.

NA internal supervisory controls

Supervisory controls are performed in NA and GFS division in two different ways. The first one, which was implemented in 2021, consists of the writing of an inventory of existing internal procedures of all the tasks presented in section 1.1.2 above. This document describes in detail, for each task, the responsible officers, the sources used (contact, file names, frequency, delivery period etc.), the analytical steps that are followed (user manual with print screens), transmission deadlines where applicable and final users of the output. This procedure enables the Team leaders and the Head of the division to follow the four-eye principle and to effectively monitor and supervise the activities in order to intervene, where and if necessary. Furthermore, it makes the substitution of a staff member easier, taking into consideration the fact that the small size of the division was previously considered as a high-risk factor.

The second supervisory control refers to the weekly meetings between the Head and the Team leaders, in order to follow the progress of the tasks of each team and to set the short-term and medium-term priorities of the division. The Team leaders have continuous interaction with their subordinates in order to discuss daily work-related issues and to identify and solve any rising problems.

NA external supervisory controls

The principal external supervisory body which controls and validates NA data on a continuous basis is Eurostat. This is mainly achieved through the transmission of the Tables of the ESA 2010 Transmission Programme, which is monitored on a yearly basis via the ESA 2010 Quality Report. In addition, a control of NA data is made during the annual submission of the GNI Questionnaire and Report on Quality, as well as the periodic updating of the GNI Inventory.

CYSTAT submitted the first GNI Inventory after its accession to the EU in December 2007, with reference year 2000. An updated version was resubmitted in August 2011 and it incorporated all the recommendations, action points and improvements suggested by Eurostat during the two GNI visits (in 2008 and in 2010).

The second GNI Inventory (reference year 2010) transmitted to Eurostat in June 2016 incorporated the major revisions made in September 2014, following the adoption of Regulation 549/2013 (ESA 2010) and the reservations placed during the previous cycle of GNI verification. After the finalisation of the GNI cycle 2016-2019, a revised GNI Inventory was sent to Eurostat in December 2019, in which were included the findings of the verification process. The current GNI Inventory has as a reference year 2017 and describes the sources and methods used in GNI Questionnaire 2021.

Eurostat assessment of the Member States GNI Inventory is made through:

- The General Inventory Assessment Questionnaire (GIAQ),
- GNI visits and direct verifications,
- Actions points assigned to Member States
- Transversal and Specific Reservations

Risk assessment

As it was described in the previous GNI Inventory 2010, the main risks identified by CYSTAT concerning the compilation and delivery of NA data were mainly related to the limited human resources and the absence of high intelligence information technologies. In order to minimize these high-risk factors, NA & GFS division made the following arrangements:

- In September 2020 the division was reinforced with the recruitment of three statistics officers, who were assigned to several tasks within NA section.
- Development of an IT tool (National Accounts Management System – NAMS), which enables the structural and content validation of the ESA Transmission Tables, but also the storage of all files used in the production procedure in a centralised computer system.
- Writing of an inventory of existing internal procedures of all the tasks of NA & GFS division, as described above (NA internal supervisory controls).

These developments enabled the division to minimize the risks, as follows:

- Increased internal validation checks in a formal and more automatic way
- Easier substitution of employees in case of sudden or long-term absence
- Reduction of errors and omissions made during the production procedure

- Full compliance achieved regarding the ESA Transmission Programme. High performance recognised in the Annual Quality Report of Eurostat in respect of relevance, accuracy, timeliness, coherence, accessibility etc.

However, a potential risk can be identified in the timely deliverance of source data from the various surveys or administrative sources. Misreporting and other mistakes associated with data supply can potentially harm the quality and timeliness of data as well. Finally, the lack of harmonisation between Commission Regulations (GNI versus Balance of Payments) regarding the timing of transmission deadlines lead to estimations and cause confusion among users and unnecessary revisions afterwards.

1.2 The revisions policy and the timetable for revising and finalising the estimates; Major revisions since the last version of the GNI Inventory

Revisions are an integral part of the statistical process in the production of NA, in order to incorporate any new developments stemming from the continuously changing economic environment. At the same time new data requirements or new regulations could lead to the adoption of new methodologies or the introduction of new classifications. There are two important types of revisions, which represent the core of NA compilation, namely routine revisions and major revisions.

Routine revisions include all changes for a particular period, that are in principle based on any changes that might occur in the data sources, or the adoption of the last available data. Their purpose is to achieve full comparability in volume and price changes with the previous year and for all data of a certain time period. The necessity for these revisions is arising as new data is made available between data transmissions.

Major, or benchmark revisions, which are made every five years (in September), include any revisions made to the NA data, mainly due to methodological changes, or significant changes in data sources. For consistency reasons, and in order to avoid any break in the time series, these revisions are extrapolated backwards from 1995, when applicable. The next major revision is scheduled for September 2024 in accordance with the Harmonised European Revision Policy (HERP).

The timetable for revision policy is essential for the main stakeholders and enables the surveillance of the published NA data. In addition, it facilitates the provisions of the ESA 2010 Transmission Programme. The following table presents a timetable for revisions during a calendar year:

Table 1.2.1: Timetable for revision of National Account estimates (Routine Revisions)

Year T	First estimate - Revision	Basis for calculation
February	<ul style="list-style-type: none"> ▪ First estimate of the fourth quarter of previous year T-1 (2 months after the end of the reference quarter) ▪ Possible revision of the last 7 published quarters 	<ul style="list-style-type: none"> ▪ Monthly and quarterly short-term economic indicators
	<ul style="list-style-type: none"> ▪ First estimate of annual figures for the previous year, T-1 ▪ Routine revisions on year T-2 	<ul style="list-style-type: none"> ▪ Sum of four quarters for first estimate of year T-1 ▪ Revised information from administrative sources (i.e. Government Finance Statistics (GFS), Central Bank of Cyprus (CBC))
June	<ul style="list-style-type: none"> ▪ First estimate of the first quarter of the current year T 	<ul style="list-style-type: none"> ▪ Monthly and quarterly short-term economic indicators
September	<ul style="list-style-type: none"> ▪ First estimate of the second quarter of current year T ▪ Possible revision of the last 9 published quarters 	<ul style="list-style-type: none"> ▪ Monthly and quarterly short-term economic indicators
	<ul style="list-style-type: none"> ▪ Final estimates for annual figures for year T-3 	<ul style="list-style-type: none"> ▪ Incorporation of the findings of SUT balancing procedure
	<ul style="list-style-type: none"> ▪ Revised of annual figures for year T-2 	<ul style="list-style-type: none"> ▪ Incorporation of annual economic surveys data, final data from administrative sources (i.e. GFS, CBC), extrapolation of household consumption expenditure (based on trade statistics, imports of goods, economic indicators)
	<ul style="list-style-type: none"> ▪ Revised estimates for annual figures for year T-1 	<ul style="list-style-type: none"> ▪ Updated information from administrative sources and revised short-term economic indicators
December	<ul style="list-style-type: none"> ▪ First estimate of the third quarter of current year T ▪ Possible revision of the last published quarter 	<ul style="list-style-type: none"> ▪ Monthly and quarterly short-term economic indicators

The main changes to sources and methods made since the last version of the GNI Inventory are listed below:

1. Improvements in methods and sources of GFS data regarding the revision of compensation of employees (D1) for the years 2012-2015 and the revision of Other Taxes on production (D29) for the years 2012-2015.
2. Minor revisions concerning VAT-based third EU own resource were made for the years 2010-2013 and it referred to the removal of the values of the UK rebate and other rebates.
3. Incorporation of the Work In Progress for all economic activities, where data from the annual economic surveys showed that only NACEs F and M were relevant.
4. Removal of ESM and IMF loans from FISIM; Following the decision of the GNI Committee in April 2018, CYPSTAT removed the ESM (European Stability Mechanism) and IMF (International

Monetary Fund) loans, as well as the loan from the Government of the Russian Federation, from FISIM calculations.

5. Integration of SUT balancing; All years from 2010 onwards were re-balanced in order to incorporate at a very detailed level the findings of the Action Points of previous GNI Verification Cycle.
6. Incorporation of all other Action Points of the previous GNI Verification Cycle;
 - inclusion internet purchases in HFCE
 - treatment of ship-owning companies
 - improvement for the allocation of insurance output
 - improvements for the estimation of dwelling services
 - recalculation of the Consumption of Fixed Capital for the R&D asset category using the PIM model
 - remove the double counting of the exhaustiveness adjustment made due to tipping for hairdressing and beauty treatment in NACE S
 - explicit declaration of Rents on Land in Surveys Questionnaires, so that to exclude those figures from Intermediate Consumption
 - estimation of the cost of ownership transfer of land based on information from the annual economic surveys for years 2010-2017
 - improvements on the estimation of CIF/FOB adjustment from Central Bank of Cyprus in order to calculate a coefficient by country using Foreign Trade Statistics produced by CYSTAT
 - correction of the impact of the residents/non-residents holiday homes, in order to exclude from the income received/paid the amounts of intermediate consumption and consumption of fixed capital
 - Central Bank of Cyprus, improved the calculation of the estimates for the investment income earned by domestic Mutual Funds on behalf of foreign shareholders and the estimates for the investment income earned by foreign Mutual Funds on behalf of domestic shareholders
7. Revised data from annual economic surveys
8. Revised data of Government Finance Statistics due to the findings of the Excessive Deficit Procedure (EDP) mission
9. Revised data for Balance of Payments
10. Updated FISIM calculations for imports due to revised data on stock of loans and interest of Financial SPEs
11. Adjustments due to revised administrative sources
12. Rental of houses and apartments via online platforms in order to estimate the revenue from rentals via online platforms (i.e. Airbnb)
13. Revised Government Finance Statistics
14. Specific transaction reservation on SUT balancing
15. Improvement of quality of FISIM using the raw data of the Monetary Financial Institutions (MFIs) as provided to the Central Bank of Cyprus (CBC), namely stocks of loans and deposits, as well as interest receivable on loans and payable on deposits
16. Exhaustiveness adjustment of Private Education (N1), based on the findings of SUT balancing procedure for a number of consecutive years

1.3 Outline of the Production Approach

Main Sources

The production approach is one of the two independent approaches for the estimation of GDP. It requires the calculation of Value Added by industry, which is the difference between Gross Output and Intermediate Consumption. Economic statistics by industry and institutional sector are available from annual economic surveys, administrative sources and ad-hoc surveys. Most of these statistics are produced to cover mainly requirements of Structural Business Statistics (SBS).

The close cooperation between the economic survey statisticians and the compilers of NA ensures that all necessary concepts and definitions of NA are incorporated in these surveys, as far as possible. Although the survey questionnaires are designed in a large extent to meet the requirements of ESA2010, they are also designed in a way to accommodate as much as possible the private accounting framework in order to reduce the responding burden from the businesses. Therefore, it is necessary to make transitional adjustments of the survey data to meet the needs for NA. These conceptual adjustments refer to the correction from producer to basic prices, holding gains, R&D, own-account software, allocation of FISIM and insurance output, own-account production of T.V programs and artistic originals-royalties.

The business register provides the sampling for all annual and other statistical enquiries (i.e. SBS surveys) conducted by CYSTAT. All the elements of the registration strategy are reflected in the production approach to national accounting.

The valuation of Output and Intermediate Consumption for Non-Financial Corporations (S11) and Households (S14) is formed by the annual economic surveys however, for Financial Corporations (S12) data is available from administrative sources (Central Bank of Cyprus, Monetary Financial Institutions, Insurance Company's Control).

The General Government sector (S.13) in Cyprus is composed of three sub-sectors; the Central Government (S.1311), the Local Government (S.1313) and the Social Security Funds (S.1314). Data for the assessment of government output is provided to CYSTAT by the National Treasury of the Republic. Data concerning government ministries, departments, extra-budgetary funds and the social security subsector is provided through the Treasury's online accounting database system, FIMAS (Financial Information Management Accounting System). FIMAS contains all revenue and expenditure transactions concerning these bodies in detail. For Local Government and semi-Government organisations information is obtained from the Treasury (monthly data), as well as the annual financial statements.

The sector of Non-profit institutions serving households (NPISH) (S.15) consists of non-profit institutions which are separate legal entities, that are private other non-market producers. The sources of data concerning NPISH are the annual business surveys covering all the economic activities.

Table 1.3.1: Output, intermediate consumption and value added, 2017 according to the production approach

<i>€mn</i>	Basis for NA Figures					Adjustments		Balancing	Final Estimate
	Surveys & Censuses	Admin. Records	Combined Data	Total Extrap. + Models	Other	Total conceptual	Total exhaustiveness		
Output	24.152,7	5.702,9	1.117,5	5.365,3	0,0	56,7	1.200,6	33,9	37.629,6
IC	13.806,6	2.387,6	411,1	1.222,5	0,0	2.160,1	18,7	-50,3	19.956,3
GVA	10.346,0	3.315,3	706,4	4.142,8	0,0	-2.103,4	1.181,9	84,3	17.673,3

Exhaustiveness

The main methods used in the production approach to ensure exhaustiveness are analysed in chapter 7. The estimates for exhaustiveness are classified in the N-types as follows:

- Employment method (N5)
- Illegal activities (N2)
- Income in kind & Tips (N7)
- VAT fraud (N6)
- Household Budget Survey and Ratios constructed from past surveys (N6)
- SUT balancing procedure findings (N6)
- Ad-hoc surveys and expert estimates (N3 & N6)
- Production for own final consumption (N3 & N7)
- Own-account construction (N3 & N7)

The summary table below provides an overview of the various exhaustiveness adjustments in the total Cyprus economy.

Table 1.3.2: Estimates for exhaustiveness in the production approach disaggregated by Non-Exhaustiveness Types

<i>€ million</i>	N1	N2	N3	N4	N5	N6	N7	Total
Output	88,7	94,2	30,1	0,0	15,3	875,5	96,8	1.200,6
Intermediate consumption	26,8	8,1	10,2	0,0	2,3	0,0	-28,6	18,7
Gross value added	61,9	86,1	19,9	0,0	13,0	875,5	125,4	1.181,9

Balancing

The Supply and Use Tables (SUT) is a primary tool for the integration, validation and verification of the production and expenditure approaches at product level. During the balancing procedure differences between supply and use are examined at product level, so that any discrepancies are eliminated. A detailed description of the SUT balancing procedure and the final adjustments performed are presented in Chapter 6.

1.4 Outline of the income approach

The income approach for Cyprus is automatically balanced with the production approach as operating surplus/mixed income is determined as a residual item. Independent estimates, however, are provided for components such as the compensation of employees, based on a combination of administrative data and survey results.

The main data sources

To calculate the Compensation of employees by NACE activity we use a variety of sources such as: (i) the annual economic survey results by NACE activity, (ii) employment statistics, and (iii) administrative data from the National Treasury of the Republic which are used for the General Government Sector estimates.

Exhaustiveness

The estimate for exhaustiveness refers to:

- (i) income in kind, mainly for company cars used by employees in their private life;
- (ii) tipping which is particularly prevalent in NACE activities 49 (taxis), 55 and 56 (accommodation and food service activities);
- (iii) unreported revenue from domestic household services (NACE T).

For more information on the exhaustiveness adjustments see chapter 7.

Main results

The data for the income approach by institutional sector are summarised below. In this table the gross operating surplus is derived as a residual item.

Table 1.4.1: Components of value added (GDP) according to the income approach, by institutional sector, 2017

ESA 2010 Code		Total	%	S.11	S.12	S.13	S.14	S.15
D.1 pay	Compensation of employees	8.801,7	43,5	4.823,9	995,8	2.363,6	492,1	126,2
D.11 pay	<i>Wages and salaries</i>	7.234,6	35,7	4.211,8	815,5	1.667,7	429,2	110,5
D.12 pay	<i>Employers' contributions</i>	1.567,1	7,7	612,2	180,4	695,9	62,9	15,7
D.29 pay	Other taxes on productions	401,7	2,0	280,3	12,5	0,0	107,2	1,7
D.39 rec	Other subsidies on productions	62,2	0,3	47,3	0,0	0,0	14,9	0,0
B.2n/B.3n	Net Operating surplus/Mixed Income	6.075,7	30,0	2.445,8	709,7	105,2	2.815,0	0,0
P.51.c	Consumption of Fixed Capital	2.456,4	12,1	1.085,5	58,9	448,4	836,5	27,1
B1G	Gross domestic product (at basic prices)	17.673,3	87,3	8.588,2	1.776,9	2.917,2	4.236,0	155,0
D21p	Taxes on Products and imports	2.632,3	13,0					
D31p	subsidies on Products and imports	60,3	0,3					
B1G	Gross domestic product (at market prices)	20.245,3	100,0					

1.5 Outline of the expenditure approach

Overview

The expenditure approach quantifies the performance of the national economy from the use side. It explains the way national output of goods and services are used in the economy in terms of consumption by households, non-profit institutions and the general government, investments and the balance of exports over imports.

For the components of the expenditure approach the main data sources are statistical surveys, which particularly cover Household Final Consumption Expenditure (HFCE), Capital Formation and NPISH final Consumption Expenditure. General Government Consumption is based on data obtained from the Government Finance Statistics (GFS) section. Exports and imports of goods and services are estimated by the Balance of Payments (BoP) compilers in the Central Bank of Cyprus (CBC).

The breakdown of Gross Domestic Product by expenditure components is presented in the table below.

Table 1.5.1: Breakdown of Gross domestic product by expenditure category, 2017

	2017 (€ million)
Total final consumption expenditure	16.150,1
- Household final consumption expenditure	12.941,8
- NPISH final consumption expenditure	207,4
- General government final consumption expenditure	3.000,9
Gross capital formation	4.193,0
- Acquisitions less disposals of produced fixed assets	4.223,9
- Changes in inventories	-15,8
- Acquisitions less disposals of valuables	-15,2
Balance of exports over imports	-97,8
Exports of goods and services	14.969,3
less Imports of goods and services	15.067,1
Gross domestic product (at market prices)	20.245,3

Household final consumption expenditure (HFCE)

HFCE estimates are based mainly on the results of the Household Budget Survey (HBS) which is conducted every five (5) years. Retail Trade indices, administrative sources and data from the External Trade is used for extrapolation purposes for the years in between when the HBS is not conducted. The COICOP classification is used for HFCE breakdown by expenditure component.

Domestic concept of HFCE consists of all expenditure of domestic households as well as non-residents in the Economic Territory (ET) on durable, semi-durable and non-durable goods and on services. In order to convert domestic concept to national concept residents' household expenditure abroad is added and consumption expenditure of non-residents in the ET is deducted. The BoP is the main source for both consumption expenditures by resident households in the rest of the world and consumption expenditure by non-residents in the ET.

The Table below shows the transition from the domestic concept to the national concept of the HFCE for 2017.

Table 1.5.2: Household Expenditure Aggregates (Domestic & National Concept), 2017 (€ million)

		Before SUT balancing data	Adjustment due to SUT balancing	After SUT balancing data
Final consumption expenditure by resident households in the economic territory		11.934,4	-10,4	11.924,0
Final consumption expenditure by non-resident households in the economic territory (exports of services)	+	2.716,0	0,0	2.716,0
Household consumption expenditure (Domestic Concept)	=	14.650,4	-10,4	14.640,0
Final consumption expenditure by resident households in the rest of the world (imports of services)	+	1.017,8	0,0	1.017,8
Final consumption expenditure by non-resident households in the economic territory (exports of services)	-	2.716,0	0,0	2.716,0
Household consumption expenditure (National Concept)	=	12.952,2	-10,4	12.941,8

The underlying data series is assembled by a variety of methods and routes, depending on the data sources used. In the case of official primary surveys (HBS), there are ways of ensuring that the specialised statistics are tailored as far as possible to the national accounting definitions. However, there are some cases where the HBS is not the best source of information and alternative sources are used (i.e. administrative sources, extrapolation models). This is the case for expenditure components such as Tobacco, Electricity, Purchase of vehicles, Transport Services, Life and Non-Life Insurance, Stockbroker fees, actual/imputed rentals and FISIM.

The need to adjust HBS results in order to obtain appropriate NA estimates came up as a result of differences in population and concepts (definitions) between HBS results and the NA accounts methodology. NA section takes all the necessary steps to adjust HBS data according to ESA 2010 concepts. For more details on data from alternative sources used and adjustments made see section 5.7.3 on analytical COICOP categories.

Finally, an adjustment is made due to balancing. The SUT are a primary tool for the integration, validation and verification of the expenditure approach at product level. During the balancing procedure differences between supply and use are examined at product level, so that any

discrepancies are eliminated. A detailed description of the SUT balancing procedure and the final adjustments performed are presented in Chapter 6.

NPISH final consumption expenditure

The Non-Profit Institutions Serving Households (NPISH) sector in Cyprus is partly comprised of education such as Communal Kindergartens, health activities such as Medical Laboratories, activities of membership organizations, political parties, labour and professional organizations, recreational cultural and sporting activities such as museums, libraries and sport clubs.

The main sources for the NPISH output are the annual economic surveys. In the case of Research and Development (NACE 72) a different survey is conducted. After getting the output from the surveys, the FISIM allocation is applied.

The estimates for total output of NPISH are calculated as the sum of costs and are divided by purpose into own-account fixed capital formation and sales to other institutional sectors. This allows for the exclusion of the items “receipts from sales of products” and “own account capital formation” from the final consumption expenditure estimates. Therefore, although they are included in the estimates for total output, they are excluded from the final consumption expenditure calculations. On a similar pattern a provision is made for the inclusion in the final consumption expenditure of the NPISH of the goods or services produced by market producers and supplied to households as social transfers in kind.

Government final consumption expenditure

Government final consumption expenditure is based on data obtained from the GFS section and the delimitation of the General Government sector is in line with ESA 2010 rules. A review of the General Government sector is carried out on an annual basis and the procedure, along with the list of units allocated to each sector, is listed in the Inventory of the methods, procedures and sources used for the compilation of deficit and debt data and the underlying government sector accounts that is published on the Eurostat and the CYSTAT websites.

Several sources are used for the computation of the government final expenditure. All data concerning the budgetary transactions are received from the National Treasury’s online accounting database system, FIMAS (Financial Information Management Accounting System). Data on semi-government organisations and Local Government is received from the National Treasury of the Republic (monthly reports concerning their revenue and expenditure and annual financial statements). The Social Security Funds provide the GFS section with their annual final audited

accounts. All budget codes have been classified according to ESA2010 classification codes as well as by NACE categories and by function (COFOG).

Acquisitions less disposals of produced fixed assets

The basic sources of data as regards acquisitions less disposals of tangible fixed assets (i.e. fixed capital formation) are the annual surveys. These surveys provide rich and ample information on the purchases of investment goods by NACE and type of asset. Since the economic surveys cover the investments made by the resident units (i.e. acquisition less disposal of machinery and equipment), there is no need to distinguish between residents and non-residents. There are several sources for the estimation of Gross Fixed Capital Formation (GFCF), depending on the asset (AN code). The main sources are the following:

Table 1.5.3: Main sources used for Acquisitions less disposals of produced fixed assets

Acquisitions less disposals of produced fixed assets	Surveys & Censuses	Administrative data		
		Foreign Trade Statistics	FIMAS	Ministry of Defence
Dwellings, other buildings and structures and non-residential buildings	✓			
Machinery and other equipment, ICT equipment and vehicles	✓			
Military expenditure				✓
Aircrafts		✓		
Ships		✓		
Cultivated biological resources	✓			
Research and Development (R&D)	✓			
Mineral exploration and evaluation	✓			
Computer software and entertainment, literary or artistic originals	✓			
Public expenditure for all fixed assets			✓	

Changes in inventories

The data used for the valuation of changes in inventories is obtained from the annual economic surveys conducted by the Statistical Service. The following categories of stocks are provided: Finished goods, Work-in-progress, Raw materials and supplies, Fuels and Goods Purchased for Resale. The information resulted from the annual economic surveys can be published at the 3-digit NACE level. However, this information is limited to the above general categories of stocks and their values, without any further analysis on their composition in terms of commodities (CPA).

Adjustments to the values of changes in inventories are made in order to be in line with ESA2010 principles. In NA the technical procedure of measuring the changes in inventories and holding gains/losses follows the conventional international method of calculation. Namely, the values of inventories by economic activity and by type of product at the beginning and at the end of the year are re-valued, in order to exclude holding gains and losses.

Acquisitions less disposals of valuables

Valuables include precious stones and metals, jewellery fashioned out of precious stones and metals and antiques and other art objects, such as paintings and sculptures, and collectors' items. Data for all three categories is obtained by the Foreign Trade Statistics section of CYSTAT and it includes imports minus exports of these valuables. In addition, there is a local production of paintings and sculptures that is recorded under the item of valuables and is equal to the Output of NACE 90.02.3, Activities of painters, sculptors, engravers etc. This information is obtained from the economic surveys.

Exports and Imports of goods and services

The values of exports and imports of goods and services are obtained from the BoP, which is compiled by the CBC. BoP data is compiled in accordance with the new international methodological standards (BPM6). Raw data concerning exports and imports of goods is obtained from the Foreign Trade Statistics section (CYSTAT) and BoP compilers make the necessary adjustments (i.e. CIF/FOB adjustment, data on ships of ship-owning SPEs, merchanting). For the compilation of international trade in services, a mixed collection system is in place. The main surveys conducted by the CBC are "Services" survey, "Profit and Loss" survey, "Insurance" survey, "Money Transfers" survey conducted quarterly, semi-annual "Ship-management" survey, annual "Education" survey and etc.

The main methods used in the expenditure approach to ensure exhaustiveness origin from the production approach. These main methods refer to illegal activities (N2), Employment (N5), Ad-hoc surveys and expert estimates (N3 & N6), Production for own final consumption (N3 & N7), Own-account construction (N3 & N7) and Income in kind (N7).

The summary table below provides an overview of the various exhaustiveness adjustments in the breakdown of expenditure components and types of non-exhaustiveness.

Table 1.5.4: Exhaustiveness adjustments by expenditure component, 2017 (€ million)

Expenditure component	N1	N2	N3	N4	N5	N6	N7	TOTAL
Household final consumption expenditure (HFCE)	0,0	139,1	14,9	0,0	15,3	199,0	84,9	453,3
Gross fixed capital formation (GFCF)	0,0	0,0	14,2	0,0	0,0	0,0	3,0	17,2
Import of Services	0,0	44,9	0,0	0,0	0,0	88,0	0,0	132,9
TOTAL IMPACT ON GDP	0,0	94,2	29,1	0,0	15,3	111,0	88,0	337,6

1.6 The balancing or integration procedure and main approaches to validation

Supply and Use Tables (SUT) are an important part of the system of NA, since they accommodate a vast amount of information regarding the flows of goods and services in the economy while providing an overview of the latter and all-important economic components at product level. SUT framework became a primary tool for the integration, validation and verification of the production and expenditure approaches at product level.

In terms of total values and main categories, production approach is predominance to expenditure approach since in general, the datasets of production approach are considered to be more reliable than the ones of expenditure approach. Production and Expenditure approaches are independent. However, income approach has not been yet incorporated in the mechanism of balancing procedure.

Supply and Use Tables framework makes optimal use of all available sources (economic surveys, administrative and combined data) of the reference year. Moreover, SUT framework incorporates all conceptual and exhaustiveness adjustments calculated for NA purposes.

All of these datasets are then converted to 3-digit CPA level (289 products), for both the Supply & Use side of each product, in order to feed a customized software (SUT-Equalizer) developed for balancing at 3-digit CPA level the production and expenditure at current and previous-year-prices (pyp).

During balancing procedure, the officers (users of SUT-Equalizer) make manual balancing decisions for each product so that to eliminate the discrepancy between Supply and Use side for both current and previous-year-prices. These balancing decisions are mainly driven from the quality of the sources of each component of the production and expenditure.

In general, data on domestically produced output, imports and exports of goods by product are considered to be the most reliable sets of data available, since detailed product analysis is obtained from annual surveys (or censuses) and the External Trade Division respectively.

Data on Intermediate Consumption is obtained from a model that has been developed within the SUT system framework in order to produce estimates based on previous year data and the growth rates of production volume and prices. Imports and exports of services are obtained from Balance of Payments provided by the Central Bank. Thus, although total values and the values of main categories of products are considered to be accurate, because of the restricted product breakdown obtained from the questionnaires, further detailed analysis by product is necessary which is subject to revisions during the balancing procedure.

When all the balancing decisions are made from the statistics officers, and consequently all the products are balanced, data is extracted from SUT-Equalizer and the supervisor of SUT unit investigates those balancing decisions and rejects/accepts or partly accept them or asks for more investigations from the users before making the final decision. At this stage all accepted decisions are uploaded in SUT-Equalizer and a new balancing cycle begins in order the users to eliminate the differences between Supply and Use side for those products that are still not balanced.

The above procedure continues until the Supply and Use side of all products are balanced and supervisor accepts all the balancing decisions made from the users of SUT-Equalizer.

A summary of the balancing adjustments, at the level of GDP components for Production and Expenditure approaches, is presented in the tables below:

Table 1.6.1: Balancing Adjustments on Production Approach, 2017 (€ million)

Variable	ESA2010 Code	Initial Estimate	Balancing Adjustment	Final Estimate
Gross Output	P1	37.595,7	33,9	37.629,6
Intermediate Consumption	P2	20.006,7	-50,3	19.956,3
Gross Value Added	B1G	17.589,0	84,3	17.673,3
Taxes less Subsidies	D21-D31	2.572,0	0,0	2572,0
Gross Domestic Product	B1GQ	20.161,0	84,3	20.245,3

Table 1.6.2: Balancing Adjustments on Expenditure Approach, 2017 (€ million)

Variable	ESA2010 Code	Initial Estimate	Balancing Adjustment	Final Estimate
Total Final Consumption Expenditure	P3	16.160,5	-10,4	16.150,1
Household Final Consumption Expenditure	P3	12.952,2	-10,4	12.941,8
NPISH Final Consumption Expenditure	P3	207,4	0,0	207,4
General Government Final Consumption Expenditure	P3	3.000,9	0,0	3.000,9
Gross Capital Formation	P5	4.098,3	94,7	4.193,0
Gross Fixed Capital Formation	P51G	4.226,8	-2,9	4.223,9
Changes in Inventories	P52	136,5	-152,2	-15,8
Acquisitions less disposals of valuables	P53	-15,2	0,0	-15,2
Exports of Goods and Services	P6	14.969,3	0,0	14.969,3
Imports of Goods and Services	P7	15.067,1	0,0	15.067,1
Gross Domestic Product	B1GQ	20.410,8	-165,5	20.245,3

Finally, income approach and specifically, operating surplus is processed as a residual item. A summary of the balancing adjustments, at the level of GDP components for the Income approach, is presented in the table below:

Table 1.6.3: Balancing Adjustments on Income Approach, 2017 (€ million)

Income Approach, 2017	ESA 2010 Code	Initial Estimate	Balancing Adjustments	Final Estimate
Compensation of employees	D1	8.801,7	0,0	8.801,7
Non-Financial Corporations		4.823,9	0,0	4.823,9
Financial Corporations		995,8	0,0	995,8
General Government		2.363,6	0,0	2.363,6
Households		492,1	0,0	492,1
NPISH		126,2	0,0	126,2
Gross operating surplus	B2G	8.447,8	84,3	8.532,1
Non-Financial Corporations		3.478,5	52,7	3.531,2
Financial Corporations		756,2	12,4	768,6
General Government		553,6	0,0	553,6
Households		3.632,3	19,2	3.651,5
NPISH		27,1	0,0	27,1
Mixed income	B3G	0,0	0,0	0,0
Taxes on production and imports	D2	3.034,0	0,0	3.034,0
Subsidies	D3	122,5	0,0	122,5
Gross Domestic Product	B1GQ	20.161,0	84,3	20.245,3

1.7 Overview of the allowances for exhaustiveness

The predominant approach for the measurement of GDP in Cyprus is the production approach. CYSTAT conducts on an annual basis economic surveys covering the great majority of the NACE activities. For activities not covered by these economic surveys and for public sector, administrative data is used.

Nevertheless, for exhaustiveness purposes, the data origin from the Production approach is compared with data from the Demand side, mainly the Household Budget Survey (HBS). In addition, expert estimates and ad-hoc surveys are used for the estimation of some exhaustiveness types together with, in some cases, information from administrative sources. The allowances for exhaustiveness are reviewed regularly through the Supply and Use Tables (SUT) framework, which, during the balancing procedures, allows the identification of any areas that explicit exhaustiveness estimations need to be revised.

A list of the main methods used in the production approach to ensure exhaustiveness is the following (types of non-exhaustiveness in parenthesis):

- 1) Employment method (N5)
- 2) Illegal activities (N2)
- 3) Income in kind & Tips (N7)
- 4) VAT fraud without complicity (N6)
- 5) Household Budget Survey and Ratios constructed from past surveys (N6)
- 6) SUT balancing procedure findings (N6)
- 7) Ad-hoc surveys and expert estimates (N3 & N6)
- 8) Production for own final consumption (N3 & N7)
- 9) Own-account construction (N3 & N7)

The methods with the most important share to the total exhaustiveness adjustments are the SUT balancing procedure findings, the HBS and ratios constructed from past surveys and the VAT fraud without complicity. Most of these adjustments are all classified under type N6, which is the most important non-exhaustiveness type.

1.8 The transition from GDP to GNI

Cooperation between the Central Bank of Cyprus (CBC) and CYSTAT

The implementation of new statistical standards in the field of NA and external statistics (BPM6, ESA2010), together with the need to enhance consistency and ensure data comparability between the two domains of statistics, have led to a deepening of cooperation (laid out in a Memorandum of Understanding) between the Central Bank of Cyprus (CBC), the Ministry of Finance (MoF) and the CYSTAT. More specifically, the cooperating authorities have agreed to the exchange of necessary statistical data and other relevant information to better perform their functions in the statistical field, under specific procedures set out in the Memorandum.

The Central Bank of Cyprus (CBC) is the responsible organization for compiling the Balance of Payments (BoP) statistics, which is the main source for the transition from GDP to GNI. The general principles laid down in the BPM6 on compensation of employees and property income are applied in Balance of Payments and are in line with the requirements of ESA2010.

The following table shows the transition from GDP to GNI for the year 2017.

Table 1.8.1: Transition from GDP to GNI, 2017 (€ million)

Section	Component	Credit (from RoW)	Debit (to RoW)	Net
	GROSS DOMESTIC PRODUCT (GDP)			20.245,3
8.1	Compensation of employees	75,6	102,8	-27,2
8.2	Taxes on production & imports paid to the Institutions of the EU	0,0	49,1	-49,1
8.3	Subsidies received from the Institutions of the EU	67,4	0,0	67,4
8.4	Property Income	22.034,3	22.620,1	-585,8
	Total - transitional items	22.177,3	22.771,9	-594,6
	GROSS NATIONAL INCOME (GNI)			19.650,6

Compensation of employees

Gross figures on compensation of employees are collected through the quarterly “Services” survey conducted by CBC and CYSTAT make the necessary adjustments in order to fulfil the requirements of ESA2010 and BPM6 and includes the following:

- Contributions and income tax of non-residents working in Cyprus,
- Contributions and income tax of residents working abroad,
- Estimation of wages of resident students working abroad,
- Estimation of wages of non-residents students working in Cyprus,
- Wages of residents working in the UK bases and in foreign embassies in Cyprus,
- Wages of non-residents working in Cyprus embassies abroad.

These adjustments are included in both NA and Balance of Payments statistics.

Taxes on production paid to the Institutions of the EU

This category covers those taxes on production and imports, which have to be paid to the institutions of the European Union. The main source of data for taxes paid to EU Institutions is the Government Treasury and data is provided monthly on accrual basis. These taxes also include the banks' contribution to Single Resolution Fund which is recorded in the second quarter of the year.

Subsidies granted by the Institutions of the EU

The Cyprus Agricultural Payments Organization (CAPO) is the source of data regarding subsidies on products and production received from EU. NA and GFS division makes the transformation from cash basis to accrual basis.

Property income

Data on interest, distributed income of corporations, reinvested earnings on Foreign Direct Investment (FDI) and other investment income is produced by the BoP compilers according to BPM6.

1.9 Main classifications used

The classifications used for the production approach are the classification of economic activities NACE Rev. 2 and the classification of products by activity CPA 2008. NACE Rev. 2 (up to 5 digits of detail) is used for all surveys in which statistical data on economic activities are collected and aggregated at 2-digit level for NA purposes. The CPA 2008 classification (up to 6 digits of detail) is used for the compilation and the balancing procedure of the Supply and Use Tables, aggregated at 3-digit level.

Concerning the income approach, NACE Rev. (up to 5 digits of detail) is exploited for the classification of compensation of employees (wages and salaries, employers' contribution) and aggregated at 2-digit level whereas taxes-subsidies on production is collected at total economy level.

For the expenditure approach, a number of classifications are utilised. The Classification of Individual Consumption by Purpose (COICOP at 5-digit level) is used to record household final consumption expenditure by purpose, aggregated at 3-digit level. For the final consumption expenditure of the NPISH, the Classification of the Purposes of NPISH (COPNI) is used at 2-digit level. On the other hand, Government expenditure is categorised according to the Classification of the Functions of Government (COFOG) at 4-digit level. Changes in inventories are classified by type of stock ("Finished Goods", "Semi-finished goods", "Raw materials and spare parts", "Fuels" and "Goods for resale") and gross fixed capital formation is in line with the classification of fixed assets by type of asset at 3-digit level, while construction projects are classified by type of project at 3-digit level. The Combined Nomenclature (CN8 at 2-digit level) and the classification at 3-digit level of imports by economic destination are used when processing imports and exports of goods for the requirements of NA. Finally, the Balance of Payments compiled by the Central Bank of Cyprus, in line with the Balance of Payments Manual (BPM6), is used for the classification of imports and exports of services.

1.10 Main data sources used

The main data sources used in Cyprus for the compilation of the main NA aggregates are as follows:

Statistical surveys and other data sources used for the production approach:

- Agricultural Production
 - Survey on Cereals
 - Survey on Vineyards
 - Survey on Crops
- Agricultural Structure
 - Farm Structure Survey (Census of Agriculture 2010)
 - Survey on Fruit and Olive Plantations 2017
- Department of Forest data
- Department of Fisheries and Marine Research data
- Industrial Production Survey (includes: Mining and Quarrying, Manufacturing, Electricity, Water Supply and Materials Recovery)
- Construction Survey
- Wholesale and Retail Trade Statistics (includes: Sales and Repairs of Vehicles, Wholesale Trade, Retail Trade)
- Services and Transport Survey
- Financial Services Survey
- Quarterly Profit and Loss Survey Data Report
- Administrative data: Structured reporting forms and completed analytical statements for supervisory purposes
- Structural statistics for all the branches of economic activities, accounting statistics for government organizations and enterprises

Statistical surveys and other data sources used for the income approach:

- Labour Force Survey
- Labour Cost Survey 2016

Statistical surveys and other data sources used for the expenditure approach:

- Household Budget Survey 2015/2016
- Intra – EU trade statistics and Extra – EU trade statistics data
- Registrations of Motor Vehicles by category (Road and Transport Department) and Consumer Price Index (ECOICOP classification), for Transport category (Statistical Service of Cyprus)

- Building Permits and Housing Survey
- Department of Town Planning and GHousing (for public sector)
- Balance of Payment Surveys – For Merchating and Services
 - Services Survey
 - Survey on Education
 - Survey on Insurance Services
 - Survey on the activities of ship-management companies
 - Survey on the activities of ship-owning companies
- Scientific research and experimental development (R & D) survey

Statistical surveys and other data sources used for the transition from GDP to GNI:

- Survey on External Financial Statistics
- Securities Holding Statistics
- Investment Funds Survey
- Survey on selected items of Profit and Loss from MFIs

CHAPTER 2: THE REVISIONS POLICY AND THE TIMETABLE FOR REVISING AND FINALISING THE ESTIMATES; MAJOR REVISIONS SINCE THE LAST VERSION OF THE GNI INVENTORY

2.1 The revisions policy and the timetable for revising and finalising the estimates

2.1.1 Revision policy

Revisions are an integral part of the statistical process in the production of National Accounts (NA), in order to incorporate any new developments stemming from the continuously changing economic environment. At the same time new data requirements or new regulations could lead to the adoption of new methodologies or the introduction of new classifications.

There are two important types of revisions, which represent the core of NA compilation, namely routine revisions and major revisions.

Routine revisions

Routine revisions include all changes for a particular period, that are in principle based on any changes that might occur in the data sources, or the adoption of the latest available data. Their purpose is to achieve full comparability in volume and price changes with the previous year and for all data of a certain time period. The necessity for these revisions is arising as new data is made available between data transmissions.

In the case of the quarterly accounts, the revision policy varies by quarter, as described in Table 2.1.1 below. In general, routine revisions for the quarterly data are due to (a) Revisions due to changes in the annual accounts; (b) Revisions due to changes/revisions in the short-term indicators used; (c) Revisions due to the replacement of forecasts with indicators that become available.

The data availability dictates also the revision of the annual NA results. The first annual estimates for the last completed year (T-1) are compiled in February of the following year and are considered provisional. These estimates are based on the quarterly indicators, as well as on administrative sources. The final estimates are compiled in September, 21 months after the end reference year, when the annual economic surveys, which are the main source, become available (18 months after the end of the reference year).

In September the findings from SUT balancing procedure, for the year T-3, are incorporated into the annual NA estimates and thus the GDP/GNI level is finalised accordingly.

Major Revisions

Major, or benchmark revisions, which are made every five years (in September), include any revisions made to the NA data, mainly due to methodological changes, or significant changes in data sources. In particular, these revisions include:

- Integration of new methodologies or introduction of new classifications (i.e. ESA 2010, transition to NACE Rev.2);
- Treatment of action points, as well as specific and transversal reservations, based on Eurostat guidelines;
- Incorporation of important statistics that is available only every few years (e.g. Household Budget Survey every five years, Population Census every ten years);
- Introduction of new data sources.

For consistency reasons, and in order to avoid any break in the time series, revisions as mentioned above, are extrapolated backwards from 1995, when applicable. The next major revision is scheduled for September 2024 in accordance with the Harmonised European Revision Policy (HERP).

2.1.2 Timetable for revising and finalising the estimates

The timetable for revision policy is essential for the main stakeholders and enables the surveillance of the published NA data. In addition, it facilitates the provisions of the ESA 2010 Transmission Programme. The following table presents a timetable for revisions during a calendar year:

Table 2.1.1: Timetable for revision of National Account estimates (Routine Revisions)

Year T	First estimate - Revision	Basis for calculation
February	<ul style="list-style-type: none"> ▪ First estimate of the fourth quarter of previous year T-1 (2 months after the end of the reference quarter) ▪ Possible revision of the last 7 published quarters 	<ul style="list-style-type: none"> ▪ Monthly and quarterly short-term economic indicators
	<ul style="list-style-type: none"> ▪ First estimate of annual figures for the previous year, T-1 ▪ Routine revisions on year T-2 	<ul style="list-style-type: none"> ▪ Sum of four quarters for first estimate of year T-1 ▪ Revised information from administrative sources (i.e. Government Finance Statistics (GFS), Central Bank of Cyprus (CBC))
June	<ul style="list-style-type: none"> ▪ First estimate of the first quarter of the current year T 	<ul style="list-style-type: none"> ▪ Monthly and quarterly short-term economic indicators
September	<ul style="list-style-type: none"> ▪ First estimate of the second quarter of current year T ▪ Possible revision of the last 9 published quarters 	<ul style="list-style-type: none"> ▪ Monthly and quarterly short-term economic indicators
	<ul style="list-style-type: none"> ▪ Final estimates for annual figures for year T-3 	<ul style="list-style-type: none"> ▪ Incorporation of the findings of SUT balancing procedure
	<ul style="list-style-type: none"> ▪ Revised of annual figures for year T-2 	<ul style="list-style-type: none"> ▪ Incorporation of annual economic surveys data, final data from administrative sources (i.e. GFS, CBC), extrapolation of household consumption expenditure (based on trade statistics, imports of goods, economic indicators)
	<ul style="list-style-type: none"> ▪ Revised estimates for annual figures for year T-1 	<ul style="list-style-type: none"> ▪ Updated information from administrative sources and revised short-term economic indicators
December	<ul style="list-style-type: none"> ▪ First estimate of the third quarter of current year T ▪ Possible revision of the last published quarter 	<ul style="list-style-type: none"> ▪ Monthly and quarterly short-term economic indicators

The exact dates for publication of the quarterly and annual NA are announced in advance in CYSTAT website, under the release calendar. The revision policy of National Accounts is published on CYSTAT website on the following link:

https://library.cystat.gov.cy/NEW/National_Accounts-Revision_Policy-EN-070521.pdf

2.2 Major revisions since the last version of the GNI Inventory

The GNI Inventory verified in the previous cycle was prepared in May 2016 with 2010 as the reference year. Between that Inventory and the actual GNI Inventory of December 2021, six GNI Questionnaires and Reports on Quality were transmitted to Eurostat incorporating any main changes to sources and methods. Two overview tables listing these main changes are presented below. The first table indicates the nominal change on GNI, while the second one the impact in relative terms.

Table 2.2.1: Main changes to sources and methods, € million

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<u>GNI Questionnaire 2017</u>										
1. Improvement in methods and sources of GFS data			23	22	39	42				
2. UK rebate (Action Point 16)	9	14	7	10						
<u>GNI Questionnaire 2018</u>										
3. Incorporation of Work In Progress (Action Points 10 & 13)							-13			
4. Removal of ESM and IMF loans from FISIM (Action Point 19)		-22	-47	75	50	108	94			
<u>GNI Questionnaire 2019</u>										
5. Integration of SUT balancing (Action Point 1)	-68	-172	-247	-170						
6. Findings of all other Action Points A	269	307	374	303	38	121	148	110		
7. Revised data from annual economic surveys	-6	32	29	8	-9	13	219			
8. Revised data of Government Finance Statistics				-4	-5	54	51	94		
9. Revised data for Balance of Payments	-118	110	97	341	-116	-51	-109	384		
10. Updated import of FISIM for SPEs	0	0	0	0	0	0	0	0		
11. Adjustments due to revised administrative sources					-6	66	20	-20		
<u>GNI Questionnaire 2020</u>										
12. Rental of houses and apartments via online platforms								35	60	
13. Revised Government Finance Statistics								-133	-134	
14. Specific transaction reservation on SUT balancing					22	57	57			
<u>GNI Questionnaire 2021</u>										
15. Improvement of quality of FISIM								10	-96	-40
16. Exhaustiveness adjustment of Private Education (N1)								25	28	31

Table 2.2.2: Main changes to sources and methods, % impact on GNI

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<u>GNI Questionnaire 2017</u>										
1. Improvement in methods and sources of GFS data			0,12	0,13	0,23	0,23				
2. UK rebate (Action Point 16)	0,05	0,07	0,04	0,06						
<u>GNI Questionnaire 2018</u>										
3. Incorporation of Work In Progress (Action Points 10 & 13)							-0,07			
4. Removal of ESM and IMF loans from FISIM (Action Point 19)		-0,11	-0,25	0,44	0,29	0,60	0,52			
<u>GNI Questionnaire 2019</u>										
5. Integration of SUT balancing (Action Point 1)	-0,36	-0,86	-1,30	-0,97						
6. Findings of all other Action Points A	1,42	1,53	1,96	1,73	0,23	0,68	0,82	0,57		
7. Revised data from annual economic surveys	-0,03	0,16	0,15	0,04	-0,06	0,08	1,21			
8. Revised data of Government Finance Statistics				-0,02	-0,03	0,30	0,28	0,48		
9. Revised data for Balance of Payments	-0,63	0,55	0,51	1,94	-0,68	-0,29	-0,60	1,98		
10. Updated import of FISIM for SPEs	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		
11. Adjustments due to revised administrative sources					-0,04	0,37	0,11	-0,10		
<u>GNI Questionnaire 2020</u>										
12. Rental of houses and apartments via online platforms								0,18	0,29	
13. Revised Government Finance Statistics								-0,68	-0,65	
14. Specific transaction reservation on SUT balancing					0,13	0,32	0,31			
<u>GNI Questionnaire 2021</u>										
15. Improvement of quality of FISIM								0,05	-0,46	-0,18
16. Exhaustiveness adjustment of Private Education (N1)								0,13	0,13	0,14

1. Improvement in methods and sources of GFS data

This revision refers to the items of compensation of employees – D.1 (2012-2015) and other taxes on production – D.29 (2012-2014). More specifically, there was a revision in the value of the compensation of employees mainly attributed to a further analysis provided on the temporary reductions for the government wage bill. A minor improvement in methods was made to the recording of taxes and particularly to the inclusion in D.29 (other taxes on production) of the taxes on pollution. These figures were previously included in the Goods and Services (fees), affecting General government final consumption expenditure.

2. UK rebate (Action Point 16)

Minor revisions concerning transition item 8 (VAT-based third EU own resource) were made for the years 2010-2013, within the context of Action Point A16, and it concerned the removal of the values of the UK rebate and other rebates.

3. Incorporation of Work In Progress (Action Points 10 & 13)

Following the findings of the GNI Mission in February 2017, CYSTAT had to estimate and incorporate in NA data Work In Progress for all economic activities. Data from the annual economic surveys showed that only NACEs F and M were relevant.

4. Removal of ESM and IMF loans from FISIM (Action Point 19)

Following the decision of the GNI Committee (April 2018), CYSTAT had to remove the ESM (European Stability Mechanism) and IMF (International Monetary Fund) loans, as well as the loan from the Government of the Russian Federation, from FISIM calculations.

The significant negative value in the imports of FISIM, which also affected General Government final consumption expenditure, was due to the preferential and low non-market interest rates on the loans that the State was receiving from the ESM and the IMF. In addition, the loan from the Government of Russia had to be excluded, since it is not a loan received from a monetary financial institution.

5. Integration of SUT balancing (Action Point 1)

CYSTAT completed the work on Action Points of the previous verification cycle and it was decided to re-balance all years from 2010 onwards in order to incorporate at a very detailed level the findings of these Action Points.

6. Findings of all other Action Points A

APs 2/9 – Household Budget Survey benchmark/ Internet purchases

The results of the Household Budget Survey (HBS) 2015 were available from the Social Statistics Division in 7-digit COICOP analysis, at the end of 2017. Since the previous HBS was conducted in 2008-2009 and in the meantime (2012-2014) Cyprus faced a severe financial crisis which affected significantly the households' consumption, the revision on Household final consumption expenditure was higher than normally expected for this period. It should be noted that the analysis of HBS data by National Accounts proved that the household consumption behaviour changed considerably as a result of the financial crisis, but also this effect deteriorated by the fact that there was a big interval of 6-7 years between the two surveys.

Since HBS estimates are extrapolated using retail trade statistics, which do not cover internet purchases, other sources had to be investigated. For this purpose, CYSTAT made the necessary arrangements and received data on web purchases from the leading private company for credit card purchases.

AP 3 – ship-owning companies

Although the recommendations of the Eurostat Task Force on ships and aircrafts indicated that the SPEs companies have no impact on the GNI, it was proved during the GNI mission to Cyprus that the Consumption of Fixed Capital (CFC) of the ships has an impact, since the reinvested earnings flow to the Rest of the World should correspond to the Net Operating Surplus rather than to the Gross Operating Surplus of these companies. In addition, apart from the CFC, the GNI is also impacted by the Gross Tonnage Tax which should further reduce the Net Operating Surplus.

AP 4 - Insurance

Following the recommendations of Eurostat, CYSTAT made the following improvements on insurance output and its allocation by sector:

- Application of the standard method instead of the sum-of-costs approach for the years 2016 onwards (due to the non-material difference between the two methods for the years 2010-2015).
- Allocation of insurance output by institutional sector is now based on their premiums instead of their technical reserves.
- A part of insurance output is allocated to the General Government sector as of 2016 (negligible amount).

- Inclusion of the investment income attributed to policyholders in the property income received from and paid to the Rest of the World.

AP 6 - Dwellings

Following the recommendations of Eurostat, CYPSTAT made the following improvements for the estimation of dwelling services:

- Use of a more detailed breakdown for the extrapolation index for the estimation of the average rent based on the EUSILC survey.
- Restriction of the extrapolation period (5 years) by using the analytical information on the actual rental per stratum from the EUSILC of 2016.
- Change of the output/IC rate based on the Household Budget Survey data.

In addition, it should be mentioned, that since the small points for improvement as proposed by Eurostat (cost element of furniture, mid-year stock and holiday homes) are considered as non-material, no changes were made.

More details on these improvements are presented in chapter 3.18.

AP 7 – R&D

CYPSTAT recalculated the Consumption of Fixed Capital for the R&D asset category using the PIM model, since the initial method used was proved insufficient. In addition, a mark-up for Net Operating Surplus was included in the calculation of output of own-account R&D of market producers.

AP 8 – Tipping for hairdressing

CYPSTAT removed the double counting of the exhaustiveness adjustment made due to tipping for hairdressing and beauty treatment in NACE S, since it is already included in the exhaustiveness adjustment for misreporting of this activity.

AP 11 – Rent on land

Following the placement of this Action Point, a change was made to the questionnaire of annual economic surveys, in order to have explicitly the value on Rents on land (D.45) as of 2016 reference year. Nevertheless, for years 2010-2015 these rents were included in the intermediate consumption, but they were proved to be non-material.

AP 12 – Cost of ownership transfer of land

NA estimated the cost of ownership transfer of land based on information from the annual economic surveys for years 2010-2017.

AP 14 – CIF/FOB adjustment

The Central Bank of Cyprus, which is the responsible authority for the calculation of the CIF/FOB adjustment, made the necessary improvements in order to calculate a coefficient by country using Foreign Trade Statistics produced by CYSTAT. There is no impact to the GNI.

AP 15 – Holiday homes

CYSTAT corrected the impact of the residents/non-residents holiday homes, in order to exclude from the income received/paid the amounts of intermediate consumption and consumption of fixed capital (Net Operating Surplus).

AP 17 – Mutual Funds

The Central Bank of Cyprus, improved the calculation of the estimates for the investment income earned by domestic Mutual Funds on behalf of foreign shareholders and the estimates for the investment income earned by foreign Mutual Funds on behalf of domestic shareholders.

7. Revised data from annual economic surveys

The Structural Business Statistics (SBS) division of CYSTAT made during the last 3-4 years revision on economic data due to several reasons such as the update of the Business Register, revised information from enterprises, correction of sample etc. The impact for years 2010-2015 is not significant, while for 2016 it is mainly due to the incorporation of economic data of the related companies of a particular large multinational enterprise. These companies were registered in 2016 but were not in the sample of 2016 survey due to a delay in Business Register update.

8. Revised data of Government Finance Statistics

Following the Excessive Deficit Procedure (EDP) mission that took place in May 2019, several EDP APs were placed, with some of them having an impact on NA estimates. It mainly concerns the reclassification of two units in the Government sector (Human Resources Development Authority and the Game Fund).

9. Revised data for Balance of Payments

Regarding Imports and Exports of goods and services, the alignment of external statistics with NA led to the improvement/change of some collection methods and compilation practices. Particularly, the main drivers behind the changes recorded in goods and services are the following:

- Alignment of the reporting samples of CBC with the corresponding ones of CYSTAT and incorporation of data of entities not covered by the Services Survey of CBC.
- Increase of the use of available administrative sources.
- Adoption of new practices based on Action Points identified through the GNI production cycle (i.e. internet purchases).
- Incorporation of data resulted from the comparisons of mirror data of other EU countries (i.e. government services).

In addition to the aforementioned adjustments/revisions, further changes have been implemented regarding the coverage of Special Purpose Entities (SPEs). The Central Bank of Cyprus, given its commitment to the European Central Bank and Eurostat, enhanced the coverage of SPEs. This enlarged coverage affects considerably FISIM as well as financial services (sum of cost approach). Please note that the latter has zero impact on net exports and on GDP/GNI.

As it concerns Property Income, a significant revision was made in gross terms, but in net terms this revision was much lower. The revision made was mainly attributed to the enhancement of the coverage of SPEs. The impact of the above was on the gross figures (i.e. increase in debits and credits while net remained the same). The property income was mainly affected by the incorporation of a small number of financial SPEs not previously covered in external statistics. Despite the fact that the number of new entities included in the data is small, the size of the revision in gross terms is huge due to their nature and to the small size of Cyprus economy. Characteristically, it is noted that it is possible for a single financial SPE to be engaged in transactions greater than 1 billion euro (>5% of GNI) in a single year. In net terms, the impact of the inclusion of the said entities is zero due to the sum-of-costs approach.

The need for the abovementioned enhancement in the coverage of financial SPEs was also reflected in the Quality Reports on External Statistics of both Eurostat and the ECB. This revision was a work in progress for the last few years, but the inclusion in external statistics and NA data was decided to be made during the benchmark revision. It is worth mentioning that as a result of this revision the ECB amended its “Annual MIP metadata report” for Cyprus for 2019 as following: “Lastly, the SPEs coverage has substantially improved, and this is reflected in large revisions and better geographical allocation of external assets and liabilities.”

It should be noted that a number of new financial SPEs were identified using the information received from the Tax Authorities, as well as from the mirror exercise with other countries.

This revision, apart from the substantial impact on income, also affected the stocks of SPEs (for example, in 2017, the stocks of SPEs (both, assets and liabilities) doubled with the revision). Please note that, since these are financial SPEs (i.e. they only have financial instruments), and almost all of their assets and liabilities are vis-à-vis non-residents, this means that their assets in external statistics assets are very similar to their liabilities. Concerning the large upward revision in their income, this also resulted from the large increase in their stocks. The volatility of SPEs income over years has to do with the profitability that they exhibit each year, which varies over time.

10. Updated import of FISIM for SPEs

The updated FISIM calculations for imports are due to revised data on stock of loans and interest of Financial SPEs (S.127) from non-resident financial corporations received by the CBC in the framework of their benchmark revision. The revised import of FISIM of S.127 has no impact on the GNI (sum-of-costs approach).

Furthermore, there was a revision of the imports of FISIM of the ship-owning companies, based on updated information received from their accountants. According to this information, the stock of loans received and the interest payable from non-resident financial corporations is lower than initially estimated. On the other hand, the total stock of loans received from related companies was higher and as a result the total stock of loans of ship-owning companies does not change significantly.

Finally, there was a revision of stock of loans and interest of other non-financial corporations (other than ship-owning companies) due to better coverage.

11. Adjustments due to revised administrative sources

Beyond all the above improvements, CYPSTAT incorporated revised information which were received from administrative sources. The most important change was made to the Gross Fixed Capital Formation, following the incorporation of the revision of Foreign Trade Statistics. The counterpart transaction in imports/exports of goods is described and reported in part (d) above, revision of BoP.

Furthermore, there was updated information from financial corporations (i.e. revised accounts of payment institutions), as well as from commercial banks (non-FISIM part and intermediate inputs) that affected the main components of the production approach.

Finally, CYSTAT incorporated the values connected to the contribution to the Single Resolution Mechanism in D2 - Taxes on production and imports paid to the institutions of the EU for years 2016-2017.

12. Rental of houses and apartments via online platforms

In January 2020 and following the findings of SUT balancing for the year 2016, it was proved that there is a significant activity via Airbnb and other platforms in Cyprus. CYSTAT, in order to estimate the revenue from rentals via online platforms (i.e. Airbnb), used data/info from an online database.

Using the number of residencies and the days booked by quarter, the annual days booked of residencies by district/area is computed. Finally, multiplying total days booked by the Average Daily Rate (price), the estimated revenue by district/area is calculated. For the estimation of Intermediate Consumption, CYSTAT used a percentage rate of 25% of the revenue, after consultation (ad-hoc information) from accountants and auditors.

For more details on the calculation of these rentals for reference year 2017, please see chapter 7.1.3.

13. Revised Government Finance Statistics

Several improvements in methods and sources were applied to GFS data, with some of them having an impact on NA estimates. The most important concern the recording of VAT arrears for years 2017-2019 and the correction of the taxes on products of the Energy Conservation Fund (ECF) for years 2017-2019.

Specifically, the Tax Authorities were classifying income tax arrears (D.5) under the VAT receipts (D.211). As a result, and after analytical investigation, the relevant amounts were distinguished and the D.211 value was revised downwards.

Regarding the ECF, Eurostat placed an EDP Action Point, since the financial statements proved to be different from the FIMAS (the Financial Management System of the Treasury of the Republic) for the case of the tax on renewable energy sources collected by the Electricity Authority of Cyprus (EAC). Specifically, as it was explained to Eurostat EDP colleagues “The peculiarity of this particular fund is that a different accounting basis exists in FIMAS (currently cash basis) and the economic accounts prepared and submitted by the ECF is on accrual basis. Another issue we investigated, is the netting out from the accounts appeared in FIMAS collections and corresponding payments from and to households regarding renewable energy sources”. It should be noted that the market output of the EAC is obtained from the annual economic surveys and then the tax on renewable energy sources is

deducted. Consequently, a higher amount than initially estimated (FIMAS) is deducted from output and is in taxes on products (D.214). Thus, there is no impact on GDP/GNI, but only to Value Added (NACE D) at basic prices and taxes on products (D.214).

In addition to the above, there was a minor revision on GFS data for the years 2017-2018 due to the recording of transactions for VAT (MOSS scheme). Particularly, the MOSS VAT receipts retained in Cyprus as a recipient country are now recorded as D74 REC and not as D.211. For the reverse case, the VAT attributed to Cyprus as consumer is now recorded as D.211, while the part of the MOSS VAT receipts retained by the recipient countries (15% or 30%) is recorded as D74 PAY.

14. Specific transaction reservation on SUT balancing

In September 2019, the findings of all other Action Points of the previous verification cycle were integrated in the SUT framework and incorporated in the GNIQ 2019. For the years 2014-2015 the incorporation of all other Action Points was made at a macro level considering the findings of the balancing at a detailed level for the previous years. Under the context of the SUT Reservation, CYPSTAT completed the detailed (3-digit CPA) balancing for years 2014-2016 incorporating the work of all other Action Points.

15. Improvement of quality of FISIM

In order to enhance the quality of FISIM calculation, CYPSTAT decided in late 2020 to assess the raw data of the Monetary Financial Institutions (MFIs) as provided to the Central Bank of Cyprus (CBC), namely stocks of loans and deposits, as well as interest receivable on loans and payable on deposits.

The calculation and allocation of FISIM, until recently, was based only on quarterly data by sector and by currency of stocks and of interest on an aggregated level. CBC was not transmitting analytical information to CYPSTAT by MFI. Given the importance of FISIM allocation and the calculation of the Internal and External Reference Rates, CYPSTAT asked CBC to provide the quarterly data by sector and currency for all individual MFIs for stocks and for interest. It should be noted that the information of stock is obtained from the balance sheet of the MFIs, while the interest from the Profit and Loss. These items are collected from two different departments of the CBC and the MFIs complete separate reports for the Central Bank.

CYPSTAT accessed the analytical information received from the two departments of CBC by examining the implicit rate for each sector and currency for all MFIs. Following this exercise CYPSTAT prepared a set of questions for those MFIs for which implausible rates or a break in the series existed. The main issues that were identified are the following:

- A number of MFIs reported significant amounts of stocks and zero or insignificant interest.
- There were cases where no stocks were declared, while there was an amount of interest.
- Significant change of the implicit interest rate between quarters.
- Obvious misclassification of sectors either in stocks or in interest.

The CBC forwarded CYSTAT request for clarification to the MFIs with questionable data and they responded to the questions raised. In several cases they corrected their reports or some of them provided explanations for the peculiar data they had submitted to CBC.

The exercise of the improvement of FISIM calculation concerned years 2017-2020, nevertheless CBC has agreed to provide CYSTAT on a regular quarterly basis the micro information necessary to access the quality of the stocks and interest reported by MFIs.

16. Exhaustiveness adjustment of Private Education (N1)

After the SUT balancing procedure for the years 2010-2016, it became apparent that a further upward adjustment of Output of NACE P (education) was needed in order to cover some underground activities (N1), such as gymnastics and sport instruction (personal trainers), as well as dance and music instruction (i.e. private piano lessons). It should be noted that these instructors have indeed an important underground activity and they intentionally avoid registration mainly for tax and social security obligations. For more details please see chapter 7.1.3.

2.3 Planned actions for improvement

In the framework of the continuous efforts for the production of high-quality NA data, CYSTAT examines several aspects for further improvement. Specifically, the following actions are envisaged for the next few years:

- **Development of new software for producing Quarterly National Accounts (QNA) estimates**

CYSTAT decided to develop a new software for the production of QNA estimates. The possible solutions have been investigated and the decision has been made in order to develop a tool where the QNA estimates can be produced in the traditional way (use of short-term indices and econometric models), but also with the use of Quarterly Supply & Use Tables (QSUT). The functionalities regarding the use of QSUT will be developed despite the fact that currently QSUT are not produced, so that as soon as these tables are ready to be easily incorporated in the production of QNA estimates. Both ways of producing QNA

estimates will ensure better estimates for QNA and consequently better estimates for annual NA.

- **Extension of the Government Data Warehouse**

The Government Data Warehouse (GDW) is a project that was initiated by the Department of Information Technology Service and its objective is to provide government units and entities with easy access to accurate, consistent and integrated government data. The GDW is continuously evolving in order to include additional sources relevant for statistical purposes. An officer of the NA and GFS division is a member of the Committee that monitors the implementation and improvement of the GDW.

- **Creation of a Common Server Location**

The NA and GFS division has started using internally a common data management location on a server. This enables the possible simultaneous use of working and other files by all staff of the division without the need to exchange files via emails or USB ports.

CHAPTER 3: THE PRODUCTION APPROACH

3.0 GDP according to the production approach

The production approach is one of the two independent approaches for the estimation of GDP (the other being the expenditure approach). Value Added is calculated as the difference between Gross Output and Intermediate Consumption. The Value Added together with the Net taxes on products constitute the GDP from the production approach.

A table describing the breakdown of output, intermediate consumption and gross value added by NACE sections is shown below:

Table 3.0.1: Main aggregates by NACE

NACE Rev.2	Output	Intermediate consumption	Gross value added	NACE GVA to total GVA
A	782,2	405,9	376,3	2,1%
B	77,3	59,9	17,4	0,1%
C	2.950,5	1.959,7	990,8	5,6%
D	657,1	434,2	222,9	1,3%
E	314,0	166,1	147,9	0,8%
F	2.977,5	2.056,3	921,2	5,2%
G	3.276,7	1.286,8	1.989,9	11,3%
H	4.693,8	3.453,1	1.240,6	7,0%
I	2.476,8	1.206,8	1.269,9	7,2%
J	3.284,6	2.135,5	1.149,1	6,5%
K	5.506,9	3.722,0	1.785,0	10,1%
L	2.152,5	553,2	1.599,3	9,0%
L 68.2	1.314,1	400,5	913,7	5,2%
M	2.479,5	913,7	1.565,8	8,9%
N	521,3	193,4	327,9	1,9%
O	1.987,9	430,7	1.557,2	8,8%
P	1.322,3	244,8	1.077,5	6,1%
Q	1.105,8	412,9	692,9	3,9%
R	475,4	187,4	288,0	1,6%
S	421,6	134,0	287,6	1,6%
T	166,1	0,0	166,1	0,9%
TOTAL	37.629,6	19.956,3	17.673,3	100,0%
Taxes on products			2.632,3	
Subsidies on products			60,3	
GROSS DOMESTIC PRODUCT			20.245,3	

A table describing the breakdown of output, intermediate consumption and gross value added by NACE sections and institutional sectors (S11-S15) is shown below:

Table 3.0.2: NACE Section by institutional sector, 2017

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
A	Output	73,1		17,4	691,6		782,2
	Interm. Consumption	44,8		1,8	359,2		405,9
	Gross Value Added	28,3	0,0	15,6	332,4	0,0	376,3
	% of sector in GVA	7,5%	0,0%	4,1%	88,3%	0,0%	100,0%
B	Output	70,2			7,1		77,3
	Interm. Consumption	55,1			4,8		59,9
	Gross Value Added	15,1	0,0	0,0	2,2	0,0	17,4
	% of sector in GVA	87,1%	0,0%	0,0%	12,9%	0,0%	100,0%
C	Output	2.749,2			201,3		2.950,5
	Interm. Consumption	1.847,5			112,2		1.959,7
	Gross Value Added	901,7	0,0	0,0	89,1	0,0	990,8
	% of sector in GVA	91,0%	0,0%	0,0%	9,0%	0,0%	100,0%
D	Output	657,1					657,1
	Interm. Consumption	434,2					434,2
	Gross Value Added	222,9	0,0	0,0	0,0	0,0	222,9
	% of sector in GVA	100,0%	0,0%	0,0%	0,0%	0,0%	100,0%
E	Output	294,3			19,7		314,0
	Interm. Consumption	156,4			9,7		166,1
	Gross Value Added	137,8	0,0	0,0	10,1	0,0	147,9
	% of sector in GVA	93,2%	0,0%	0,0%	6,8%	0,0%	100,0%
F	Output	2.557,7		108,2	311,6		2.977,5
	Interm. Consumption	1.838,4		4,1	213,7		2.056,3
	Gross Value Added	719,2	0,0	104,0	97,9	0,0	921,2
	% of sector in GVA	78,1%	0,0%	11,3%	10,6%	0,0%	100,0%

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
G	Output	2.931,4			345,3		3.276,7
	Interm. Consumption	1.182,4			104,3		1.286,7
	Gross Value Added	1.749,0	0,0	0,0	240,9	0,0	1.989,9
	% of sector in GVA	87,9%	0,0%	0,0%	12,1%	0,0%	100,0%
H	Output	4.450,5		125,4	117,8		4.693,8
	Interm. Consumption	3.376,6		18,7	57,8		3.453,1
	Gross Value Added	1.074,0	0,0	106,7	60,0	0,0	1.240,6
	% of sector in GVA	86,6%	0,0%	8,6%	4,8%	0,0%	100,0%
I	Output	2.175,2			301,6		2.476,8
	Interm. Consumption	1.082,5			124,4		1.206,8
	Gross Value Added	1.092,7	0,0	0,0	177,2	0,0	1.269,9
	% of sector in GVA	86,0%	0,0%	0,0%	14,0%	0,0%	100,0%
J	Output	3.250,5		32,4	1,7		3.284,6
	Interm. Consumption	2.125,8		8,5	1,1		2.135,5
	Gross Value Added	1.124,7	0,0	23,9	0,5	0,0	1.149,1
	% of sector in GVA	97,9%	0,0%	2,1%	0,0%	0,0%	100,0%
K	Output		5.483,7	3,8	19,5		5.506,9
	Interm. Consumption		3.710,1	1,0	10,9		3.722,0
	Gross Value Added	0,0	1.773,6	2,8	8,5	0,0	1.785,0
	% of sector in GVA	0,0%	99,4%	0,2%	0,5%	0,0%	100,0%
L	Output	154,3			1.998,2		2.152,5
	Interm. Consumption	60,0			493,2		553,2
	Gross Value Added	94,3	0,0	0,0	1.505,0	0,0	1.599,3
	% of sector in GVA	5,9%	0,0%	0,0%	94,1%	0,0%	100,0%
<i>L 68.2</i>	<i>Output</i>				1.314,1		1.314,1
	<i>Interm. Consumption</i>				400,5		400,5
	<i>Gross Value Added</i>	0,0	0,0	0,0	913,7	0,0	913,7
	<i>% of sector in GVA</i>	0,0%	0,0%	0,0%	100,0%	0,0%	100,0%

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
M	Output	2.244,5		39,7	182,9	12,4	2.479,5
	Interm. Consumption	827,2		9,0	75,4	2,0	913,7
	Gross Value Added	1.417,3	0,0	30,6	107,4	10,4	1.565,8
	% of sector in GVA	90,5%	0,0%	2,0%	6,9%	0,7%	100,0%
N	Output	465,5			55,8		521,3
	Interm. Consumption	171,7			21,7		193,4
	Gross Value Added	293,8	0,0	0,0	34,1	0,0	327,9
	% of sector in GVA	89,6%	0,0%	0,0%	10,4%	0,0%	100,0%
O	Output			1.987,9			1.987,9
	Interm. Consumption			430,7			430,7
	Gross Value Added	0,0	0,0	1.557,2	0,0	0,0	1.557,2
	% of sector in GVA	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%
P	Output	256,0		824,9	239,1	2,2	1.322,3
	Interm. Consumption	87,1		71,0	86,1	0,6	244,8
	Gross Value Added	168,9	0,0	753,9	153,0	1,6	1.077,5
	% of sector in GVA	15,7%	0,0%	70,0%	14,2%	0,2%	100,0%
Q	Output	211,4		471,3	337,3	85,8	1.105,8
	Interm. Consumption	98,0		167,9	110,6	36,3	412,9
	Gross Value Added	113,3	0,0	303,4	226,7	49,5	692,9
	% of sector in GVA	16,4%	0,0%	43,8%	32,7%	7,1%	100,0%
R	Output	366,5		22,1	32,2	54,7	475,4
	Interm. Consumption	142,4		4,5	11,6	28,9	187,4
	Gross Value Added	224,1	0,0	17,5	20,5	25,9	288,0
	% of sector in GVA	77,8%	0,0%	6,1%	7,1%	9,0%	100,0%
S	Output	50,8		1,8	257,0	111,9	421,6
	Interm. Consumption	20,1		0,5	69,0	44,3	134,0
	Gross Value Added	30,7	0,0	1,3	188,0	67,6	287,6
	% of sector in GVA	10,7%	0,0%	0,5%	65,4%	23,5%	100,0%

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
T	Output				166,1		166,1
	Interm. Consumption				0,0		0,0
	Gross Value Added	0,0	0,0	0,0	166,1	0,0	166,1
	% of sector in GVA	0,0%	0,0%	0,0%	100,0%	0,0%	100,0%
TOTAL	Output	22.958,3	5.483,7	3.634,9	5.285,7	267,0	37.629,6
	Interm. Consumption	13.550,3	3.710,1	717,9	1.866,1	112,0	19.956,3
	Gross Value Added	9.408,0	1.773,6	2.917,0	3.419,6	155,0	17.673,3
	% of sector in GVA	53,2%	10,0%	16,5%	19,3%	0,9%	100,0%

3.1 The reference framework

National Accounts Synthesis team is responsible for the collection and processing of data which is necessary for the production of annual National Accounts estimates concerning the production approach. For this purpose, all the available information is organised and processed through a centralised data system where annual National Accounts estimates are produced. These estimates are validated and compared with the corresponding figures from the expenditure approach of GDP.

The main data sources for the compilation of GDP regarding the production approach are based on annual economic surveys conducted by CYPSTAT, administrative data, combined data and extrapolation models. In addition, conceptual adjustments are made in order to ensure the transition from private to national accounting concepts and finally exhaustiveness adjustments are applied for the completeness of the coverage of economy. Balancing procedure through the Supply and Use Tables (SUT) framework is the last step before the finalization of GDP estimates.

Regarding the main methodologies used for estimating output and intermediate consumption, for most market producers is the outcome of annual economic surveys. For the remaining market producers the output and intermediate consumption are estimated using various models (i.e. Dwellings Services, FISIM). For producers of goods and services for own final use, output and intermediate consumption is estimated using calculations based on information collected from several sources, i.e. for own account construction the Building Permits and Housing survey is used. Finally, for non-market producers the output is estimated using the sum of cost approach. Please see relevant NACEs for more analytical information.

Business Register

The business register provides the sampling frame for all annual and other statistical enquires conducted by the Statistical Service of Cyprus. All the elements of the registration strategy are reflected in the production approach to national accounting. The register – based surveys of producer units are used, and the results of the full surveys and the regularly updated sample surveys based on these are also incorporated into the accounting data.

The Statistical business register is linked with the following administrative registers:

1. Office of the Registrar's register which is responsible for keeping the Register of Companies, Partnerships, Business names, Trade Marks, Patents and Industrial Designs.
2. VAT register: According to the provisions of the Vat legislation every taxable person, natural or legal who carries on a business is liable to registered in the Vat Register.
3. Social Insurance Register: Every employer who contributes for his employees is obliged to be registered in the Social Insurance Register.

The business Register covers two types of units and two corresponding ways of subdividing the economy, which are quite different and serve separate analytical purposes.

Institutional units: According to ESA 2010 Institutional units are economic entities (enterprises, legal units, local units) that are capable of owning goods and assets, of incurring liabilities and of engaging in economic activities and transactions with other units in their own right. The institutional units are grouped together into five mutually exclusive domestic institutional sectors:

- (a) Non-financial corporations
- (b) Financial corporations
- (c) General government
- (d) Households
- (e) Non-profit institutions serving households

Local kind of activity units: When institutional units carry out more than one activity, they shall be partitioned according to the type of activity (NACE division).

The table below presents the number of enterprises, local units by NACE Rev.2 for 2017:

Table 3.1.1: Overview of the register (Number), 2017

NACE (Rev.2)	Enterprises	Local Units
A	3.618	3.622
B	50	59
C	5.024	5.438
D	75	89
E	201	280
F	7.847	8.083
G	16.704	19.650
H	3.113	3.355
I	5.770	6.234
J	1644	1.724
K	2.956	3.617
L	1.000	1.083
M	7.988	8.164
N	3.082	3.337
O	447	916
P	2.667	3.594
Q	3.940	4.144
R	2.073	2.229
S	5.234	5.901
T	23.653	23.653
Total of Units	97.086	105.172

The enterprise is the smallest legally independent institutional unit, is the natural starting point for the valuation process. Only very few sets of statistical data contain combined information for each establishment as well as for the whole enterprise and there are no statistical records of intra-company supply operations. Since it was impossible to convert the whole system to a local KAU basis, the concept of the enterprise has essentially been preserved for those areas of the economy in which enterprise operates. This means that enterprises are classified into industries on the basis of their primary economic activity, which is identified by measuring the contribution of each activity to the gross output that the enterprise generates.

Secondary trade activities are estimated as the gross margin between sales and purchases of goods for re-sale. This information is provided by the annual economic surveys and it is estimated as “Sales of goods purchased for re-sale by the enterprise in the same condition as purchased” *minus* “Purchases of goods for re-sale in the same condition as purchased” *plus* “Change in stocks of the goods for re-sale by the enterprise in the same condition as purchased”.

National Accounts make the necessary relocation of output and intermediate consumption to Trade activity, using information from annual economic surveys data. For more details, see section 3.4.

There is not a cut off thresholds for small units in the statistical business register. However, for the statistical unit “Enterprise”, only the units with employment are included.

The statistical Business Register is updated on a monthly basis using the administrative and obtains data on Legal units, Enterprises, Kind of Activity Units, Local Units and Enterprise groups.

Treatment of producer units

Exhaustiveness adjustments are made for producers that are not required to register because they have no or marginal market output (non-exhaustiveness type N3).

CYSTAT investigated in which activities household units could be involved as a result of producing goods for own-consumption. The large number of hunting licenses issued, was strong evidence that household units are involved in the own-account consumption of small animals killed through hunting. The data for hunting is included in the estimation of the Output of NACE A and direct information is provided from the Fauna and Wildlife Service. Apart from hunting, an estimate is made for sport fishing based on information obtained from the Fisheries Department.

In addition, a marginal adjustment was made for household producers that have some market output but is below the level at which the producer is expected to register. This was the case for Cottage industry activities pursued at home such as embroidering, weaving and basketry (NACE C).

Household units are also involved in some cases in the own-construction of dwellings. The work in question comprises construction work undertaken personally by the property owner and/or friends and relatives in the form of unpaid (voluntary work) third-party help. The estimation of the own-construction output was based on the information obtained from the questionnaires of the Building Permits Survey, in which there was an explicit reference for the cases where the house was built by the owner and its family.

Producer units that should have registered and are deliberately not registering are divided to underground producers (non-exhaustiveness type N1) and illegal producers (non-exhaustiveness type N2).

Type N1 is associated with small producers who intentionally avoid registration in order to avoid tax and social security obligations. Until recently, no type N1 explicit adjustments were made, however, following the SUT balancing results of the last years it became apparent that two specific exhaustiveness adjustments should be made as of 2017. The first exhaustiveness adjustment relates to activity via Airbnb and other platforms in Cyprus, while the second one concerns the non-registered activity of NACE P.

Type N2 includes producers that deliberately fail to register as a legal entity or as entrepreneurship because they are involved in illegal activities. In September 2014, CYSTAT incorporated in NA data estimates on the illegal activities of prostitution and drugs. Adjustments were included in NACE A and NACE G for the case of drugs, and NACE S for prostitution. No adjustments were made for smuggling, since the smuggling activity of tobacco and alcohol products appears to be insignificant in Cyprus.

For more details on these non-exhaustiveness types see chapter 7.

In the Business Register, the following unincorporated enterprises are included:

- Government (General Government Sector)
- Semi Government Organizations (General Government or Non-Financial Corporations Sectors)
- Municipalities (General Government Sector)
- Community Council (General Government Sector)
- Religious Institutions (Non-profit institutions serving households Sector)
- Societies or Associations (Non-Financial Corporations or Non-profit institutions serving households Sectors)
- Private Enterprises/ Self-employed persons (Households sector)
- Unofficial Partnerships (Non-Financial Corporations Sector)

Foreign branches in Cyprus that meet the Statistical unit enterprise definition are treated as quasi corporations in Business register and classified in Non-Financial Corporations or Financial Corporations Sector. Producer households that also meet the Statistical unit enterprise definition are treated as quasi corporations in Business register and classified in Households sector.

Private Non-profit institutions are legal or social entities whose status does not allow them to be a source of income profit or other financial gains. Private non-profit institutions are Non-Market producers and thus are classified to NPISH sector.

Private Non-profit institutions serving businesses are classified to NPISH sector, when their contributions or subscriptions, don't exceed 50% of their production cost.

Special Purpose Entities

Special Purpose Entities (SPEs) were incorporated in the National Accounts estimates in the major revision that took place in September 2014. These estimates were based on the work done in co-operation with the Central Bank of Cyprus and followed the recommendation by the Task Forces on (a) Multinationals, (b) Ships and Aircrafts and (c) Holding companies and Head Offices, in which CYSTAT participated actively and contributed in the formulation of the final reports.

In Cyprus a large number of entities, directly owned by non-resident companies, is registered as a result of the high level of business services provided and the favourable tax legislation. These entities do not have any physical presence in the country and normally are represented by a Legal or Audit Company. Since they have no physical presence, they are not incorporated in the annual economic surveys that are conducted by CYSTAT. For the identification and the NACE classification of the SPEs, economic data from the Tax Authorities together with some criteria obtained from the final reports obtained from the Task Forces mentioned above were used.

In Cyprus three types of SPEs are currently identified, namely Financial Corporations (the great majority involved in holding companies activity), Invoicing and Ship-Owning. The first two categories, following the recommendations of the Task Force on Multinationals are classified as captive financial institutions and the valuation of their output is estimated as the sum of costs.

In order to identify whether an entity should be considered as an SPE and its type, a decision tree is used for the classification of resident legal units. The decision tree is presented in the ANNEX 3.I at the end of chapter 3. Its structure is in line with the general criteria laid out in ESA 2010 Regulation and BPM6, i.e.:

1. The enterprise is a legal entity formally registered with a national authority and subject to fiscal and other legal obligations of the economy in which it resides.
2. The enterprise is controlled directly or indirectly by a non-resident parent.
3. The enterprise has few or no employees, little or no production in the host economy and little or no physical presence in the economy in which it is created by its parent, which is typically located in another country.
4. Almost all the assets and liabilities of the enterprise represent investments in or from other countries.

5. The core business of the enterprise consists of group financing or holding activities, i.e. the channeling of funds from non-residents to other non-residents. However, in its daily activities, managing and directing plays only a minor role.

It is worth mentioning that the decision tree includes the main principles for the classification of the resident legal entities. However, further investigation is carried out in the case of entities whose classification is not clear or whose impact on the data is significant.

Regarding ship-owning companies, they are classified as institutions owning non-financial assets and the estimation of their output is based on the rentals received. In these estimates are included ships which the economic owner is a company registered in the Business Registrar of Cyprus. For the identification of the economic owner of a vessel, data from the IHS Fairplay registry and the Deputy Ministry of Shipping (former Department of Merchant Shipping) is used. In practice, a large number of vessels are registered in Cyprus Registrar in order to benefit from the favourable taxation system (ship tonnage tax instead of corporate tax). National Accounts estimates were based on analytical data for year 2012, and for the years prior 2012 an extrapolation model based on registrations and de-registrations sourced from the the Deputy Ministry of Shipping (former Department of Merchant Shipping) was used. For benchmark year 2012, data was examined case by case and it was proved that the majority of these vessels were engaged in activities of time and spot chartering which, according to the recommendation of the Task Force, is strong evidence that the legal owner is at the same time the economic owner. It should be noted that, regardless the fact that SPEs do not have an impact to GNI, in the case of ship-owning companies there is an impact equal to the size of the consumption of fixed capital (€254 million for 2017) and to a lesser extent to tonnage tax (€3,1 million for 2017). These two elements reduce the Net Operating Surplus which corresponds to the reinvested earnings flow to the Rest of the World.

Unincorporated enterprises belonging to a non-resident unit and have branches in Cyprus are obliged to register either in Office of the Registrar, VAT register or Social Insurance Register which are the main sources for the business register of CYPSTAT. Based on the fact that all the elements of the registration strategy are reflected in the production approach to national accounting, this ensures the inclusion of local branches in national accounts data. European Group Register (EGR) is also an important source to exchange information on the treatment of branches with counterpart countries in order to ensure coherent recordings. Branches abroad belonging to a resident unit and recorded through EGR are excluded from national accounts data in Cyprus.

The Statistical Business Register (SBR) covers all Resident Legal units (LeUs), all resident relationships and all relationships with a foreign legal unit parent (first level). In order to ensure a proper

identification of resident legal units belonging to Multi-National Enterprise Groups (MNEs) and their coherent treatment by the counterpart countries, the following the following measures are taken:

1. All resident LeUs are delivered to EGR IS for identification.
2. Foreign parent LeUs are identified in EGR IS by CYSTAT.
3. The LeU, Relationships (REs), Enterprises (ENTs) and LeUs belonging to each Enterprise are delivered to EGR.
4. After the initial frame is received from EGR, the group structures are improved and updated data on ENTs is sent to EGR.
5. After the preliminary frame is received, the group data is validated and improved by CYSTAT.

Please note that CYSTAT participates in the voluntary Ad-hoc activity for identification of resident LeUs under request. Furthermore, CYSTAT participates as a partnering country in the Profiling activity 2020 (ref. year).

The annual economic surveys, which are the main source of information for the production approach, are conducted using as a statistical unit the concept of enterprise. In Cyprus the great majority of institutional units have a relatively small size and it's not very common to have large enterprises which are engaged in several economic activities (KAUs). National accounts make the necessary relocation from each NACE activity to Trade for some large enterprises which are also engaged in trade activities.

Main Sources

A full range of economic statistics is available from annual economic surveys, ad-hoc surveys and administrative sources. Most of these statistics are not produced specifically for National Accounts purposes but also cover the needs for other statistical requirements (Structural Business Statistics-SBS). The close cooperation between the economic survey statisticians and the compilers of national accounts ensures that all necessary concepts and definitions are incorporated, as far as possible, into the various sets of these statistics.

Basis for NA Figures

Non-Financial Corporations (S11) and Households (S14)

Annual Economic Surveys

The core of the process for the valuation of output and intermediate inputs is formed by the annual economic surveys which are conducted in almost all NACE categories by CYSTAT. This applies especially to the secondary and tertiary broad economic divisions of the Cyprus economy.

Surveys are conducted using enterprise as being the statistical unit. The surveys are based on a PPS sampling (Probability proportional to size) according to stratified employment, size and NACE. For further information, see chapter 10.

Censuses

In addition to annual economic surveys, the results of Censuses on various economic activities are also incorporated into the national accounts. This mainly takes place in the context of revisions of the national accounts, because the findings in question cannot be integrated into the ongoing GDP valuation process without disrupting the time series. Examples of such censuses are the 2011 Census of Population and housing and the Census of Agriculture 2010. The latest Census of Agriculture for 2020 and Census of Population and housing for 2021 are expected to be implemented in NA estimates in the benchmark revision of 2024.

The incorporation of such large-scale surveys into the national accounts is done in a number of ways:

1. Direct incorporation of the results for the year under review;
2. Incorporation by means of adjustments to annual statistics (adjustment at source);
3. Use of an extrapolative estimation mechanism (if necessary) for the next annual statistics.

Other Sources

Alternative sources are used for specific activities of the economy such as the Agriculture Sector (NACE A), Dwelling Services (NACE 68.2-Actual and Imputed Rentals) and Ship owning (part of NACE 50).

The estimates in the agricultural sector are based on extensive statistical data on agriculture. Both output and intermediate consumption are valued by using a combination of statistics from various sources. The main sources are (a) Economic Agricultural Accounts and (b) administrative data provided by the Government Finance Statistics. For further information, see section 3.7.

The sources for estimating the Output of Dwelling Services are the Population and Housing Census and the EUSILC (European Union Statistics on Income and Living Conditions) survey. For further information, see sections 3.5 and 3.18.

Regarding the activities of Ship owning (SPE's) a combination of sources are used namely IHS fair play registry, a special survey conducted by the Central Bank of Cyprus and data from the Deputy Ministry of Shipping (former Department of Merchant Shipping). For further information, see sections 3.5 and 3.14.

Financial Corporations (S12)

Annual and quarterly data is available from administrative sources for the Financial Services Sector. For NACE 64 data is mainly obtained from the Central Bank of Cyprus through an analytical Quarterly Profit and Loss Survey (QPLS). The reporting units are the Monetary Financial Institutions (MFIs). Regarding NACE 65, the Insurance Company's Control Service provides data for Structural Business Statistics for Insurance Services subsector. This data is processed and presented in an aggregated form for National Accounts purposes. For the remaining units in the Financial Services Sector data is mainly collected through the Financial Services survey which is carried out annually. For further information please see chapter 10.

General Government (S13)

The General Government sector (S.13) in Cyprus is comprised of **three** sub-sectors: the Central Government (S.1311), the Local Government (S.1313) and the Social Security (S.1314). Sub-sector S.1312 is not applicable for Cyprus. It includes:

Central government subsector (S.1311)

The Central Government consists of budgetary units, extra-budgetary funds and semi-government organizations as laid out below:

- Budgetary units

1. Constitutional Powers
2. Constitutional Services
3. Independent Services
4. Ministry of Defence

5. Ministry of Agriculture, Natural Resources and Environment
6. Ministry of Justice and Public Order
7. Ministry of Commerce, Industry and Tourism
8. Ministry of Labour and Social Insurance
9. Ministry of the Interior
10. Ministry of Foreign Affairs
11. Ministry of Finance
12. Independent Offices
13. Ministry of Education and Culture
14. Ministry of Communications and Works
15. Ministry of Health

- Extra-budgetary units

1. Public Loans Fund
2. National Betting Authority
3. National Solidarity Fund
4. Social Support Independent Agency
5. Recapitalisation Fund
6. Turkish Cypriot Property Administration Fund
7. Relief Fund for Affected Persons
8. Education A' Fund
9. Fund for the Construction of Cyprus Museum
10. Council of Preservation of Memory of EOKA Liberation Struggle 1955-1959
11. Cyprus State Scholarship Foundation

12. Energy Conservation and the Promotion of Utilisation of Renewable Energy Sources

13. Sinking Fund

- Semi-government organisations	<u>NACE</u>
1. Cyprus Sports Organisation	84.12.8
2. Cyprus Theatre Organisation	90.01.1
3. Cyprus Tourism Organisation	84.13.8
4. University of Cyprus	85.42.1
5. School Committees	84.12.5
6. Cyprus University of Technology	85.42.1
7. Open University of Cyprus	85.42.1
8. Cyprus Broadcasting Corporation	60.20.1
9. Cyprus News Agency	63.91.1
10. Cyprus Investment Promotion Agency	84.11.5
11. Research Promotion Foundation	84.11.5
12. Cyprus Cultural Foundation	94.99.9
13. Bank of Cyprus Oncology Centre	86.10.2
14. Cyprus Agricultural Payments Organisation	84.13.1
15. Youth Foundation	94.99.9
16. Symphony Orchestra Foundation	90.01.3
17. Cyprus National Addictions Authority	84.12.2
18. Cyprus Standards Organisation	71.20.9
19. Central Agency for Equal Distribution of Burden	64.91.1
20. Cyprus Organisation for Storage and Management of Oil Stocks (COSMOS)	84.13.3
21. Cyprus Petroleum Storage Company Ltd	52.10.3
22. Agricultural Insurance Organisation	65.12.1
23. Game Fund	84.13.2
24. Cyprus Energy Regulatory Authority (CERA)	84.13.5

25. Cyprus Radio Television Authority	84.12.4
26. Office of Electronic Communications & Postal Regulations (OCECPR)	84.13.5
27. Human Resources Development Authority	85.5.97

Semi-government organisations are examined according to the Manual of Government Deficit and Debt (MGDD) guidelines. The ones that are included in the General Government sector are non-market producers (i.e. they fail the 50% market test) and are controlled and mainly financed by the government. However, they are assigned to various NACE codes as indicated in the list above.

Based on the “Questionnaire on government controlled units classified outside general government”, the following organisations are government controlled, but are not classified under S13. The list of these organisations and their sector classification is provided in the table below:

Table 3.1.2: Semi-government organizations outside General Government sector

	SECTOR	
1	<i>Cyprus Telecommunications Authority</i>	<i>S11</i>
2	<i>Electricity Authority of Cyprus</i>	<i>S11</i>
3	<i>Cyprus Ports Authority</i>	<i>S11</i>
4	<i>Ayia Napa Sewage Disposal Board</i>	<i>S11</i>
5	<i>Larnaca Sewerage and Drainage Board</i>	<i>S11</i>
6	<i>Limassol – Amathus Sewerage Board</i>	<i>S11</i>
7	<i>Nicosia Sewerage Board</i>	<i>S11</i>
8	<i>Paphos Sewerage Board</i>	<i>S11</i>
9	<i>Paralimni Sewerage Board</i>	<i>S11</i>
10	<i>Idalion Sewerage Board</i>	<i>S11</i>
11	<i>Nicosia Water Board</i>	<i>S11</i>
12	<i>Limassol Water Board</i>	<i>S11</i>
13	<i>Larnaka Water Board</i>	<i>S11</i>
14	<i>Cyprus Land Development Corporation</i>	<i>S11</i>
15	<i>Cyprus Certification company</i>	<i>S11</i>
16	<i>Cyprus Grain Commission</i>	<i>S11</i>
17	<i>Cyprus Forest Industries</i>	<i>S11</i>
18	<i>Cyprus Securities and Exchange Commission</i>	<i>S12</i>
19	<i>Housing Finance Corporation</i>	<i>S12</i>
20	<i>Cyprus Stock Exchange</i>	<i>S12</i>
21	<i>Cooperative Central Bank Ltd</i>	<i>S12</i>

Data for the assessment of government output is provided to CYSTAT by the National Treasury of the Republic. Data concerning government ministries, departments, extra-budgetary funds and the social security subsector is provided through the Treasury’s online accounting database system, FIMAS (Financial Information Management Accounting System). FIMAS contains all revenue and

expenditure transactions concerning these bodies in great detail (including all flows to other subsectors and bodies).

All data concerning the transactions of the State Budget is received from the National Treasury in electronic form every month. The National Budget contains some 20,000 expenditure budget codes and around 1,000 revenue codes. Each code has a unique identification serial number, description and the group with a division in which it belongs to. For example, each ministry has a unique code that makes it distinguishable from the other ministries, and each group is divided into divisions. The level of detail is sufficient enough and provides all the necessary information concerning the flows between various bodies of the same sub-sector and the other sectors of general government.

All new budget codes, established during the month examined, are investigated and codified as they arise. The National Treasury provides all the information fifteen days after the closing of the “accounting period” (i.e. 15 days after the end of every month).

Having this kind of analysis available, the section responsible for the public sector accounts, monitor all those budget codes on a monthly and quarterly as well as on a yearly basis. All budget codes have been classified according to ESA2010 as well as by NACE and by function (COFOG).

Data concerning semi-government organisations (included in the Central Government subsector) and local government are also provided through the National Treasury, which collects information on a monthly basis, tabulates it and transmits it to CYSTAT shortly after the reference period (usually within 20 days after the end of every month).

State government subsector (S.1312)

The State government is not applicable in Cyprus.

Local government subsector (S.1313)

In Cyprus the Local Government subsector consists of 39 municipalities and 349 community boards. Data on the Local Government subsector is collected by the National Treasury on a monthly basis, which then tabulates the data and transmits it to CYSTAT (the same procedure as the one followed for the semi-government organisations is followed).

A cross-checking procedure is also performed as regards transfers from the budget to local authorities with the use of FIMAS. This is very useful for consolidation purposes.

Social security funds subsector (S.1314)

The Social Security Funds consists of the following six funds:

1. Social Insurance Fund
2. Medical Treatment Scheme Fund
3. Regular Employees Provident Fund
4. Redundancy Fund
5. Central Holiday Fund
6. Insolvency Fund

The data that concerns the transactions of these funds is covered in FIMAS, hence the procedure followed is identical to that followed for the Central Government departments.

Delimitation criteria

The sub-sector Central Government is defined as including all administrative departments and other governmental departments and bodies, where their activities are incorporated in the national budget and form a single institutional unit.

In certain cases, government departments have sufficient revenue derived from their operations of providing goods and services and cover more than 50% of their costs, thus satisfying the relevant criterion for market producers of ESA2010. However, these departments are not sufficiently independent, in the sense that their financing needs are met by the annual national budget and they have neither autonomy of decision, nor any control or authority over their respective income. These bodies, namely the Civil Aviation department (NACE 52.23.1) and the Postal Services (NACE 53.10.1), are deemed to be part of Central Government market bodies producing market output within the Central Government. In principle none of the activities included in the national budget have been classified outside the general government sector.

For the sector classification of government units engaged in market production, practical problems do not permit their reclassification as public quasi-corporations, since it is impossible to produce a complete balance sheet for them, especially with regard to debt assignment and the allocation of general tax revenue. The annual accounts of the twenty-two semi-government organizations that were classified in the general government sector are recorded separately under central government

(S.1311) as they were found to be non-market producers which were controlled and mainly financed by central government.

On the basis of the 50% criterion referred to ESA2010, the general government sector is divided as follows into economic activity categories and into market and non-market producer units:

Table 3.1.3: Market and non-market production in the sector of general government, 2017

NACE Rev.2	Activity division	Output (€ million)	Central Government
02	Forestry and logging	17,4	NMP
42	Civil engineering	108,2	NMP
52	Warehousing and support activities for transportation	98,7	NMP/MP
53	Postal and courier activities	26,7	MP
60	Programming and broadcasting activities	30,1	NMP
63	Information service activities	2,3	NMP
65	Insurance, reinsurance and pension funding, except compulsory social security	3,8	NMP
71	Architectural and engineering activities; technical testing and analysis	13,0	NMP
72	Scientific research and development	10,9	NMP
74	Other professional, scientific and technical activities	3,4	NMP
75	Veterinary activities	12,3	NMP
84	Public administration and defence; compulsory social security. Includes Local Authorities (NMP/MP) and Social Security (NMP)	1.987,9	NMP
85	Education	824,9	NMP
86	Human health activities	444,9	NMP
88	Social work activities without accommodation	26,4	NMP
90	Creative, arts and entertainment activities	7,3	NMP
91	Libraries, archives, museums and other cultural activities	14,8	NMP
94	Activities of membership organisations	1,8	NMP
	Total for general government sector	3.634,9	

Note: MP = market production, NMP = non-market production

Non-profit institutions serving households - NPISH (S15)

The sector of Non-profit institutions serving households (NPISH) (S.15) consists of non-profit institutions which are separate legal entities, that are private other non-market producers. Their principal resources, apart from those derived from occasional sales, are derived from voluntary contributions in cash or in kind from households in their capacity as consumers, from payments made by general government and from property income.

The sources of data concerning NPISH are the annual business surveys covering all the economic activities. Two main types of NPISH may be distinguished:

- a) The first type consists of NPISH, which are created by associations of persons to provide goods or, more often, services primarily for the benefit of their members themselves. They include NPISH such as professional or learned societies, political parties, trade unions, consumers' associations, churches or religious societies, and social, cultural, recreational or sports clubs.
- b) The second type of NPISH consists of charities, relief or aid agencies that are created for philanthropic purposes. Such NPISH provide goods or services on a non-market basis to households in need, including households affected by natural disasters.

For the identification method of NPISH sector the following steps are used:

- a) It was observed that some NACE categories did not include any NPISH units by definition. Hence these categories were removed.
- b) In the cases where NACE categories included both NPISH and non-NPISH units ("mixed composition"), the non-NPISH units along with their corresponding (economic) data, have been removed.
- c) The remaining cases were verified as NACE categories with "pure" NPISH component.

The resulting list is presented in the table below:

Table 3.1.4: NPISH Classification

NACE	Description of Activity	NPISH	Market Output
85.10.3	Kindergartens (communal)	All	NO
86.10.3	The Cyprus Institute of Neurology and Genetics	All	NO
86.90.1	Medical laboratories	Mixed	NO
86.90.9	Other Human health activities	Mixed	YES
87.30.1	Homes for the aged	Mixed	NO
87.90.1	Special boarding homes and hostels with accommodation	All	YES
87.90.9	Other social work activities with accommodation	Mixed	YES
88.10.3	Special boarding homes and hostels without accommodation	Mixed	NO
88.91.1	Child Day nurseries	Mixed	YES
88.99.1	Charity and welfare societies	All	YES
88.99.2	Societies for the protection of the elderly, handicapped etc.	All	YES
88.99.9	Other social work activities without accommodation	Mixed	YES
91.01.3	Activities of the libraries if the local authorities	All	YES
91.01.9	Activities of cultural centres	All	NO
91.02	Museums activities	Mixed	YES
93.12.1	Activities of sports clubs	Mixed	YES
93.19.1	Activities of athletic organizations	Mixed	YES
94.11.1	Activities of business and employers membership organizations	Mixed	YES
94.12.1	Activities of professional membership organizations	Mixed	YES
94.20.1	Activities of trade unions	Mixed	YES
94.91	Activities of religious organizations	Mixed	YES
94.92	Activities of political organizations	Mixed	NO
94.99	Activities of other membership organizations	Mixed	YES

Note: The criterion used to determine which of those private institution units are engaged in market or non-market activity is the 50% criterion.

3.2 The borderline cases

The **inclusion** of the following borderline cases in production is ensured as follows:

- a) Own-account construction of dwellings by households is included in NACE F and is estimated based on the information obtained from the questionnaires of the Building Permits Survey, in which there is an explicit reference for the cases where the house is built by the owner and its family or friends (voluntary work). The concept of communal construction is not applicable in Cyprus.

Own-account production of TV programmes is obtained from the analytical questionnaires of the annual economic surveys and is included in NACE J.

Own-account production of software is not obtained directly from the annual economic surveys. An estimate based on an ad-hoc survey and on employment data for computer

professionals resulted to an estimation of the own-account software equal to 26% of the total GFCF on software (obtained from the economic surveys). NACEs J, K and M are involved in the production of own-account software (for more details see chapter 7).

The primary source for the measurement of Research and Development is the R&D survey carried out by CYSTAT according to the definitions, the concepts and the methodology of the Frascati Manual. According to survey evidence, both market and non-market producers do not purchase R&D, thus all the R&D development is produced for own-account purposes.

It should be noted that the own production does not include own-account mineral exploration, since the natural gas exploration and production company that has been involved in the projects for evaluating Cyprus' natural resources, purchases services from the mother company who is a non-resident unit (imports of services).

The own-account production of machine tools is not applicable for the case of Cyprus since no engineering enterprises do business on the island.

- b) Own-account production of agricultural products is included in the Output of NACE A. The data is obtained directly from the Agricultural division of CYSTAT which also includes this estimate to the Agricultural Economic Accounts.
- c) Dwelling services comprise of actual and imputed rentals based on the Commission Regulation (EC) No 1722/2005 on the principles for estimating dwelling services. Output of actual rentals is based on the 2016 EUSILC (European Union Statistics on Income and Living Conditions) survey. Imputed rentals (dwelling services produced by owner-occupiers) are estimated based on the structure, size, age and location of the dwelling stocks of owner-occupiers multiplied by the relevant rentals as obtained from the EUSILC survey. For more detail see section 3.18.
- d) Household services produced by employing paid domestic staff are covered by the Services Survey. An additional adjustment is made to achieve full coverage, based on expenditure from the Household Budget Survey (HBS).
- e) Volunteer activities that result in goods, as well as products bartered are considered negligible for the case of Cyprus.
- f) Products used for payments in kind are included in output as obtained from the annual economic surveys. It should be noted that this type of payments in kind are mainly observed in large companies.

- g) No further adjustments are made for products bartered since these transactions are not very common in Cyprus economy.
- h) Output from Goods for resale, mainly in Manufacturing activities is relocated to the output of Trade Sector. According to the findings of business surveys, in most of the cases KAU is the same with the Enterprise Unit. Nevertheless, there are rare cases where one Enterprise Unit consists of more than one KAU (i.e. several hotel units under the same enterprise) where the data is collected from consolidated accounts. However, this approach does not lead to any impact on GDP, since the missing information from output, due to the use of consolidated accounts, is also missing from Intermediate Consumption.
- i) The output of crop and livestock includes the value of natural growth of multi-annual plantations and livestock, which are both collected and valued at the end of each year. Data on the inventories related to forest and logging is considered as negligible.

In the case of construction enterprises, changes in inventories (stocks) as well as the value of work in progress of uncompleted structures is taken into consideration for the valuation of output through the production approach. The value of stocks of completed and unsold houses or other kind of constructions is recorded at the beginning and at the end of each year. Regarding the valuation of work in progress there is a special entry in the survey questionnaire for its calculation by project.

Intermediate Consumption consists of goods and services consumed as inputs by a process of production. These goods and services are either transformed or used up by the production process.

The **inclusion** of the following borderline cases in intermediate consumption is ensured as follows:

- a) Inexpensive tools (i.e. hammers, screwdrivers, knives etc.) used for common operations and small devices (i.e. pocket calculators) are not considered as GFCF and thus they are recorded as intermediate consumption. Small tools used in the production for more than one year are recorded as GFCF. For more details see chapter 5.10.
- b) Intra company transactions are not included in output and intermediate consumption in the cases where enterprise accounts cannot be converted to local KAU basis. Nevertheless, since there are no large group of companies in Cyprus, these intra company transactions are deemed to be of no significance. In any case, this has no impact to the GVA.
- c) FISIM purchased by resident producers is allocated among user industries based on the output of each NACE activity. Thus, the intermediate consumption for market activities and non-market activities of NPISH (S15) increases by the amount of the allocated FISIM. For the

government sector (S13), FISIM is calculated independently and thus it is excluded from the allocation procedure.

- d) There are no purchases for intermediate inputs of R&D which are acquired to be used solely for the development of further R&D products.
- e) The annual economic surveys ensure the recording of the following items as intermediate consumption:
- Costs of using rented fixed assets (recorded under “rentals”),
 - Goods and services used as inputs into ancillary activities and expenditure by employees, reimbursed by the employer, on items necessary for the employers’ production (recorded under “production expenses”),
 - Subscriptions, contributions or dues paid to non-profit business associations (recorded under “administrative and other related expenses”).
- f) As the annual economic surveys do not ensure the recording of non-life insurance service charge a conceptual adjustment is made through the allocation of Insurance output (IC and PFC) in order to bring basic data into line with ESA 2010 definitions (for more details see section 3.17.2).
- g) Daily allowances are currently fully allocated as intermediate consumption for both private and public sector. This issue is currently open until final implementation of the reservation “Recording of daily allowances”, where it will be appropriate recorded and allocated partly to wages and salaries and partly to intermediate consumption.

The **exclusion** of the following borderline cases in intermediate consumption is ensured as follows:

- a) Items that are treated as gross capital formation are not included in the inputs. Information on these items is obtained directly from several sources:
- The value of military weapons is obtained from the Ministry of Defence,
 - The valuables from the imports and from the economic surveys (output of NACE 90.02.3),
 - The data for mineral exploration from the respective questionnaire completed by the natural gas exploration and production company,

- The value for research and development from the R&D survey. No R&D is acquired and recorded in inputs,
 - Investments on software are explicitly classified under investments based on the instructions provided in the questionnaire of the annual economic surveys,
 - Major repairs and improvements are included in the GFCF. For more details see chapters 3.18 and 5.10.
- b) Intermediate consumption as obtained from the annual economic surveys does not include:
- Data for long-term contracts, leases, and licenses (considered as non-produced assets),
 - Collective services provided by government units (included in the government consumption expenditure),
 - Payments for government licenses and fees (treated as other taxes on production). These values are recorded explicitly in the questionnaire of the economic surveys under “indirect taxes”.
- c) Expenditure by employers for their employees is considered as wages and salaries in kind and is included in the item “wages and salaries” in the survey questionnaire. Nevertheless, a negative adjustment to the intermediate consumption is made for the private use of company cars (fuels), since the relevant expenditure is included in the survey results. For more details, see chapter 7.

Instructions of the annual economic surveys include a list of possible categories of income in kind that should be excluded from Intermediate Consumption. More specifically, a list of income in kind included in the survey instructions is provided in the table below:

	Type of income in kind based on Article 13 of the Commission Decision 94/168	Included in the survey instructions
1.	Meal voucher provided by employers to employees	Yes
2.	Food and accommodation provided for free of charge or at reduced prices to employees in hotels, catering establishments and agriculture	Yes
3.	Rent free dwellings and dwellings let to employees below market rentals	Yes
4.	Travel tickets supplied free of charge or at reduced prices	Yes (anything related to paid vacations)
5.	Business cars used for private purposes	No, but an adjustment is made by NA
6.	Employers contributions to the running costs of canteens, including the cost of food served and the remuneration of canteen staff but excluding rentals, cleaning, heating, electricity and other cost connected with running premises	No, but usually firms do not operate a canteen in business (small sizes)
7.	The value of the interest forgone by employers when they provide loans to employees at reduced or even zero rates of interest	No. Applicable only to the banking sector (it is deemed negligible).
8.	Electricity and coal supplied free of charge	No, not applicable for Cyprus
9.	Free telephone (at home)	No
10.	Traders consumption from its own traded goods and services	No
11.	Other	Travelling expenses to work

d) Payments for licenses for using natural resources are not treated as intermediate consumption. The findings of a relevant Action Point which was imposed within the EDP Dialogue Visit 2017 in relation to the treatment and recording of the exploration rights of natural resources were taken into consideration. In regards to the nature and the treatment of this transaction, the recording of these payments was not considered as one-off and it was split in more than one instalment, treated as property income. The involved sectors were the General Government (S.13), where a D45 (Rents on Land) receivable was recorded whilst on the payable side a D45 was recorded in the Non-Financial Corporations sector (S.11).

e) According to ESA 2010, decommissioning costs are included in the GFCF and are not part of the intermediate consumption. However, for the time being, this is not applicable for the case of Cyprus, since there are no currently such decommissioning costs.

- f) Regarding taxes and subsidies on products, there are no borderline cases for the specific categories. Moreover, these categories are examined within the EDP/GFS procedure. For more details, see chapter 3.28 and 3.29.

3.3 Valuation

Valuation of output

Market output (P.11) and output produced for own final use (P.12) are valued at basic prices. The valuation of the total output of a non-market producer (P.13) covering market, non-market and own final use output is valued by the sum of production costs. In relation to the non-market output valuation, this is obtained residually as the difference between the value of the total output and the sum of its market output and output for own final use (ESA 2010 para. 3.52). For the valuation of the market output, specific information is obtained from the SBS questionnaires regarding the existence of occasional sales for certain activities of NPISH institutions. In regards to the output for own final use this is comprised of the own account R&D and the data is obtained from the Frascati survey.

The annual economic surveys, which is the main source for output, provide data for both market output and output produced for own use. The valuation of output in surveys is at producer's prices. Output is measured as the sum of sales, changes in inventories of finished goods, the value of work-in-progress and output produced for own final use. Based on the survey questionnaires, the output is valued at prices secured by the enterprise, excluding discounts and commissions, but including taxes, when applicable. This is true for all NACE activities except for the trade activity, where taxes on products are not included in output.

In order to arrive at basic prices, National Accounts subtract net taxes on products (i.e. Taxes on Products (D214) minus Subsidies on Products (D31)) where applicable, as well as holding gains and losses. A detailed list of taxes classified under D214 and subsidies on products D31 is provided in sections 3.28 and 3.29.

As described in chapter 3.2, additional estimates for output produced for own final use is made for items that are not covered by the surveys. In terms of own final consumption an estimate is made for owner-occupiers of dwellings. This is estimated based on the relevant rent observed and the dwelling stock. Own account construction of dwellings by households is also calculated implicitly at market value and then adapted to basic prices. For the case of own account production of software and TV programmes, an additional estimate for the mark-up is made. For more details see chapter 5.10.

Imputed rentals are the only case where output for own-final use is valued at the basic prices of similar products while in the case of all other own-account production output is valued as sum of costs. A list of the own-accounts products and their valuation is shown below:

Table 3.3.1: Valuation of Own-account production

<u>Own-account product</u>	<u>Valuation</u>	<u>Comments</u>	<u>Elements of cost</u>
Construction of dwellings by Households	Market prices	The imputed labour cost is the market value of the service that would have been provided by a professional.	Output of the own-account construction includes the construction materials used and the imputed labour cost. The latter is valued at market prices, since the labour cost recorded is an estimation of the value that the owner would have paid in case where the work was done by a professional. Thus, a mark-up is implicitly included in the estimate of output and GFCF. The Depreciation is not included in the valuation. Taxes/Subsidies on production are not relevant.
TV programmes	Market prices	Sum of costs plus a mark-up based on Gross Output and Gross Operating Surplus of similar NACE activities	Includes IC and Compensation of employees. Depreciation and Net Operating Surplus are explicitly included. Taxes/Subsidies on production are not relevant.
Software	Market prices	Sum of costs plus a mark-up based on Gross Output and Gross Operating Surplus of similar NACE activities	Includes only Compensation of employees, since IC is considered as negligible and not measurable. Depreciation and Net Operating Surplus are explicitly included. Taxes/Subsidies on production are not relevant.
R&D	Market prices	<ul style="list-style-type: none"> - Mark-up for R&D is allocated to market producers, which are classified in the non-financial-corporations sector (S11). - Mark-up is considered to be zero for non-market producers (S13 & S15). - No R&D output is recorded for sectors S12 & S14. 	<p>Output for non-market producers, consists of IC, Compensation of employees and Depreciation. Taxes/Subsidies on production are not relevant.</p> <p>For own-account market producers, the output is calculated as the output for own final use (P.12) plus a mark-up.</p>

<u>Own-account product</u>	<u>Valuation</u>	<u>Comments</u>	<u>Elements of cost</u>
Agricultural products	Producer prices	Quantity * Producer price	No sum of costs
Imputed rentals	Basic prices	Dwelling Stocks * Average rent for each type of dwelling. Since there are no taxes it is equal to market prices	No sum of costs

Work in progress is included in output and it is relevant mainly to the activities of Developing (NACE 41.1) and Manufacturing (NACE C). Concerning Developing activities, for the majority of the cases the relevant information is obtained from the financial statements of the enterprises. With regard to the cases where no financial statements are available, the relevant data is obtained in the form of supplementary information in a detail table. Concurrently enterprises are asked to explicitly list all buildings under construction, the current cost of production, the expected final cost and revenue. This facilitates the calculation of the value of each incomplete building both in cost and market value. The total estimate for work in progress is thus estimated including a mark-up. It should be noted that for the case of Manufacturing, work in progress is considered negligible, since the biggest part of the sector is engaged in the food industry.

For non-market producers output valuation is by the sum of cost approach and equals the sum of intermediation consumption, compensation of employees, other taxes on production minus production-related subsidies (D29-D39) and consumption of fixed capital. The same applies to the measurement of R&D. For market producers of R&D, a mark-up is calculated by multiplying the percentage of operating surplus to gross output with the corresponding amount of gross output by NACE economic activity at 2-digit level.

Valuation of intermediate consumption

Products entering intermediate consumption are valued at purchasers' prices, as reported by enterprises in the annual economic surveys. Therefore, no adjustment is necessary. For the calculation of total intermediate consumption, the change in inventories of materials is taken into account. In particular, changes in inventories (opening minus the closing stock) of materials, are added to the purchases of raw materials for the year under study. This calculation is made by the survey compilers (for all NACE activities) and it is incorporated in the survey results provided under "raw materials". As a result, it is included in intermediate consumption.

Valuation on intra-group transactions

No adjustments are made in exports and imports due to the valuation of intra group transactions within the activities of Multi National Enterprises (MNEs), since no such cases of MNEs that apply transfer pricing exist in Cyprus. Moreover, within the scope and the work undertaken for the transversal reservation on globalization, this issue is among others, such as the application of the economic ownership principle for recording production of goods and services, the application of the economic ownership principle for the intellectual property asset, the cross-border property income flows, that Member States are requested to further scrutinize in their national accounts as provided for in ESA 2010.

Time of recording

In accordance with basic accounting principles, data in annual financial statements which are used for the estimation of output and intermediate consumption components are on accrual basis. Taxes and subsidies on products are time-adjusted in order to ensure the application of the accrual time of recording principle. For more information see sections 3.28 and 3.29.

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

Most of the data for enterprises used in the production approach is obtained from statistical surveys specifically designed for this purpose. Although the survey questionnaires are designed in a large extent to meet the requirements of ESA2010, they are also designed in a way to accommodate as much as possible the private accounting framework in order to reduce the responding burden from the businesses. Therefore, it is necessary to make transitional adjustments of the survey data to meet the needs for National Accounts.

The following conceptual adjustments are made in order to ensure the transition from private to national accounting concepts:

Adjustment due to allocation of FISIM

The allocation of FISIM among user industries is based on the output of each NACE activity. For more details, see section 3.17.1.

Adjustment due to allocation of insurance output

The insurance output is allocated based on the actual premiums payable of each NACE activity. As the annual economic surveys do not ensure the recording of non-life insurance service charge a conceptual adjustment is made. This adjustment concerns the transition from private accounting and government accounting to ESA concept. Non-life insurance premiums payable by policyholders are eliminated from their respective source data, before recording non-life insurance service charges as conceptual adjustments.

Specifically, the non-life insurance premiums payable by policyholders of S13 and S15 are excluded from the IC and output of their source data and subsequently the service charge is attributed to S13 and S15 as a conceptual adjustment by increasing their IC and output.

For more details, see section 3.17.2.

Adjustment due to net taxes on products (D.214 minus D.31)

Since the output obtained from the annual economic surveys is valued at producers' prices, an adjustment is made to the survey data in order to end up in basic prices. Thus, any taxes on products, except VAT and import taxes (D.214), are deducted from the output and the value added, while any subsidies on products (D.31) are added to the baseline figures.

Adjustment due to holding gains

Adjustments are made in National Accounts values of inventories by industries and by type at the beginning and at the end of the year in order to exclude holding gains and losses. The technical procedure of measuring the changes in inventories and holding gains/losses follows the conventional international method of calculation. For more details, see chapter 5.11.

Adjustment due to R&D

Own-account R&D produced by business enterprises has to be recorded as market output. On the other hand, there is no purchase of R&D acquired to be used solely in the creation of further R&D products that should be recorded as Intermediate Consumption. Data is available through a specialized R&D survey conducted by CYSTAT according to the definitions, concepts and methodology of the Frascati manual. For more details, see chapter 5.10.

Adjustment due to own-account software

An adjustment is made for own-account production of software including a mark-up for operating surplus based on an ad-hoc survey and on employment data for computer professionals. The detailed methodology for the calculation of this adjustment is illustrated in chapter 5.10.

Adjustment due to own-account TV

Data on television production of originals produced by television stations is obtained from the annual economic surveys. It involves the productions of all the major Cypriot TV channels. Since the production of these originals is considered as own-account, an adjustment is made to include a mark-up for operating surplus. Following a GNI specific reservation from previous cycle, National Accounts adjusted these estimates of the own-account production of film, TV and radio programs order to include a mark-up for operating surplus. For more information, see chapter 5.10.

Adjustment due to literary or artistic originals

An adjustment is made to the output of NACE 58 (publishing activities) in order to include an estimate for the value of royalties for literary originals and more specifically royalties paid to the writers of books. For more information, see chapter 5.10.

Adjustment due to relocation to trade

A specific amount from the Turnover is related to Wholesale Trade. It was decided to transfer an amount of “excess output due to trading activity” from each activity to section G for better macroeconomic conformity, between years. For the estimation of the relevant intermediate inputs the intermediate consumption/output ratio that derived from the respective survey was used. The output figures that are deducted from each activity are obtained from the annual economic survey and refer to the Gross Margin from resale of goods. This item concerns sales of products that are produced or, in some cases, resale of products that are imported. It should be noted that this relocation does not affect in any way the total GDP/GNI of the economy.

The following table presents the conceptual adjustments made for the year 2017:

Table 3.4.1: Conceptual Adjustments for the year 2017, € million

NACE	Component	Adjustments									TOTAL
		Allocation of FISIM	Allocation of Insurance Output	Transition from producers to basic prices	Holding gains	R&D	Own-account software	Own-account production of T.V programs	Artistic original - royalties	Relocation to trade	
A	Output			16,2	-0,7	0,1					15,5
	IC	16,3	6,4								22,7
	GVA	-16,3	-6,4	16,2	-0,7	0,1					-7,1
B	Output				0,0					0,0	0,0
	IC	1,8	1,2		0,6					0,0	3,7
	GVA	-1,8	-1,2		-0,6					0,0	-3,7
C	Output			-37,8	-1,0	17,0				-104,2	-126,1
	IC	71,8	12,5		5,8					-70,1	20,0
	GVA	-71,8	-12,5	-37,8	-6,8	17,0				-34,1	-146,0
D	Output			-45,8		0,6				-0,2	-45,4
	IC	16,4	3,2		16,9					-0,1	36,4
	GVA	-16,4	-3,2	-45,8	-16,9	0,6				-0,1	-81,8
E	Output				2,4					-0,1	2,3
	IC	7,3	1,5		-0,7					-0,1	7,9
	GVA	-7,3	-1,5		3,1					0,0	-5,6
F	Output				-4,2					-7,2	-11,5
	IC	66,3	9,9		0,9					-4,6	72,5
	GVA	-66,3	-9,9		-5,1					-2,7	-84,0
G	Output				32,2	0,1				137,1	169,5
	IC	71,5	29,4		-8,5					87,2	179,6
	GVA	-71,5	-29,4		40,7	0,1				49,9	-10,1
H	Output			43,0	0,0					-1,0	42,0
	IC	262,8	14,3		2,5					-0,7	279,0
	GVA	-262,8	-14,3	43,0	-2,5					-0,4	-237,0
I	Output			-9,4	0,0					-9,4	-18,8
	IC	54,4	9,5		-0,1					-4,5	59,3
	GVA	-54,4	-9,5	-9,4	0,1					-4,9	-78,1
J	Output			-4,7	1,7	32,8	28,0	1,7	1,5	-3,2	57,8
	IC	74,6	4,9		-1,6					-2,0	75,9
	GVA	-74,6	-4,9	-4,7	3,3	32,8	28,0	1,7	1,5	-1,3	-18,1
K	Output			-13,0		0,6	6,6				-5,8
	IC	995,5	85,1								1.080,6
	GVA	-995,5	-85,1	-13,0		0,6	6,6				-1.086,3
L	Output		0,0	-0,4	-1,6						-2,0
	IC	197,8	18,8		0,4						217,0
	GVA	-197,8	-18,7	-0,4	-2,0						-219,0
L 68.2	Output 68.2										0,0
	IC 68.2	184,4	16,8								201,2
	GVA	-184,4	-16,8								-201,2
M	Output			-24,7	0,0	7,2	5,6			-2,1	-14,0
	IC	46,9	9,9		0,0					-1,1	55,7
	GVA	-46,9	-9,9	-24,7	0,0	7,2	5,6			-1,0	-69,7
N	Output									-5,1	-5,1
	IC	11,5	7,1		0,0					-2,0	16,6
	GVA	-11,5	-7,1		0,0					-3,1	-21,7
O	Output	-8,3	0,8								-7,5
	IC	-8,3	0,8								-7,5
	GVA										0,0
P	Output	0,0	0,0			10,0				-0,6	9,4
	IC	9,1	1,9		0,0					-0,2	10,8
	GVA	-9,1	-1,9		0,0	10,0				-0,4	-1,3
Q	Output	1,3	0,1	0,2		4,0					5,6
	IC	11,6	3,1		0,0						14,7
	GVA	-10,4	-3,0	0,2	0,0	4,0					-9,1
R	Output	0,8	0,1	-9,7	0,2					-0,8	-9,4
	IC	7,7	1,8		-0,1					-0,4	9,0
	GVA	-6,8	-1,7	-9,7	0,2					-0,4	-18,4
S	Output	1,7	0,5		0,8					-3,2	-0,2
	IC	6,1	1,9		-0,4					-1,4	6,1
	GVA	-4,4	-1,4		1,3					-1,7	-6,3
T	Output										0,0
	IC										0,0
	GVA										0,0
Total	Output	-4,5	1,6	-86,1	29,9	72,4	40,2	1,7	1,5	0,0	56,7
	IC	1.921,0	223,2	0,0	15,9	0,0	0,0	0,0	0,0	0,0	2.160,1
	GVA	-1.925,6	-221,6	-86,1	14,0	72,4	40,2	1,7	1,5	0,0	-2.103,4

It should be noted that some source items that can be used as adjustments for the national accounts estimates like “other income” or “other expenses” are clearly clarified through the supplementary notes taken from the financial statements in annual economic surveys.

Finally, the issue of margins on trading financial assets and how this ensures transition from economic surveys to National concepts is currently open until the implementation of the Transversal Reservation “Margins on trading financial assets”.

3.5 The roles of direct and indirect estimation methods and benchmarks and extrapolations

Direct estimation methods are defined as those methods by which the required indicators (output, intermediate consumption) are collected directly in the form of statistical values. Indirect estimation methods, on the other hand, are those in which these indicators are not directly collected but are derived indirectly from other values, generally on the basis of extrapolations and models.

The following table provides a summary of the estimation method used for each NACE section.

Table 3.5.1: Direct and Indirect estimation methods, 2017

NACE	Surveys & Censuses	Administrative Records	Combined Data	Extrapolation and Models				
				Benchmark extrapolations	CFC (PIM)	Dwellings - stratification method	FISIM	Insurance
A		✓	✓		✓			
B	✓							
C	✓							
D	✓							
E	✓							
F	✓	✓			✓			
G	✓							
H	✓	✓		✓	✓			
I	✓							
J	✓	✓			✓			
K	✓	✓			✓		✓	✓
L	✓		✓			✓		
L68.2						✓		
M	✓	✓			✓			
N	✓							
O		✓			✓			
P	✓	✓			✓			
Q	✓	✓			✓			
R	✓	✓			✓			
S	✓	✓			✓			
T	✓							

As it can be seen, the overwhelming majority of the estimations is based on the annual economic surveys and on administrative records (government statistics, data from Central Bank on monetary financial institutions, economic accounts of insurance companies).

Extrapolation and models are applied for the estimation of the following items:

- 1) Dwelling services
- 2) FISIM
- 3) Ship owning companies
- 4) CFC – PIM model
- 5) Insurance

The calculation of **Dwelling services** requires the existence of detail information on the stock of dwelling. This requirement is covered by examining the results of the 2011 Population Census. One of the purposes of the Census, among many others, was to provide a complete and accurate picture of the stock of dwellings by size, type, year of construction and location. The Population Census was a complete enumeration survey with obligation to provide information.

The dwelling stock in the benchmark year 2011 is then extrapolated with the use of data provided by the annual Building Permit Survey. The extrapolation of the housing stock from the benchmark year 2011 is considered as very accurate, since the data provided by the annual Building Permit Survey is so detailed that can form the basis of a very sound estimation of the next years' housing stock.

The value of the dwelling stock for each of the different categories of dwellings is then multiplied by the average actual rent, obtained as of 2016 from the EUSILC (European Union Statistics on Income and Living Conditions) survey. Since this survey is conducted on a continuous basis, the values of actual rentals are estimated annually on the basis of the respective information provided by the EUSILC. For more information, see section 3.18.

The calculation of **FISIM** output is made on an annual basis, in accordance with the methodology described in chapter 14 of the ESA 2010.

To obtain the FISIM output (that will be allocated to domestic users) of the resident financial intermediaries (FIs) by resident user institutional sector, the internal reference rate (IRR) is calculated on interbank loans and deposits as follows:

Ratio between interest receivable on loans incurred plus interest payable on deposits held between FIs, to the stock of loans plus the stock of deposits held by FIs on behalf of other FIs.

To obtain the FISIM output (to be exported) of the resident financial intermediaries (FIs) by non-resident user institutional sector, the external reference rate (ERR) is calculated on interbank loans and deposits as follows:

Ratio of interest receivable on loans plus interest payable on deposits between resident FIs and non-resident FIs, to the stock of loans plus the stock of deposits between resident FIs and non-resident FIs.

It should be noted that for the calculation of FISIM output in Cyprus, FIs refer only to the sub-sector of deposit taking corporations - S.122.

For the calculation of FISIM output, data is needed in the form of a table of stocks of loans and deposits categorised by user sectors and the corresponding accrued interest. The interest is calculated after reallocation of interest rate subsidies to the recipients.

The total FISIM is calculated as the sum of FISIM on loans and of FISIM on deposits. The FISIM on loans is obtained as follows:

(Interest receivable on loans) minus (stock of loans multiplied by reference rate)

The FISIM on deposits is obtained as follows:

(Stock of deposits multiplied by reference rate) minus (interest payable on deposits)

For the calculation of domestic output, the reference rate above refers to the internal reference rate, whereas for the calculation of export of FISIM it refers to the external reference rate. For more details see section 3.17.

The extrapolation method is also used for estimation of the Output and the Intermediate Consumption of the **Ship-owning activity**. In the major revision in National Accounts that took place in September 2014, CYSTAT incorporated in the GNI estimates the activities of Special Purpose Entities (see section 3.1). One of the main kinds of SPEs identified in Cyprus economy is the Ship-owning activity whose estimates were made using the benchmark extrapolation method.

The nature of the activity, the new definition of the economic owner as described in the ESA2010 and the fact that the great majority of the ship-owning companies registered in Cyprus do not have physical presence in the country, made it impossible to use the economic surveys as a main source of information. As a result, CYSTAT in co-operation with the Central Bank of Cyprus, and utilizing the

recommendations of the Task Force on Ships and Aircrafts, acquired license to access the IHS Fairplay database on ships.

This database provides information on the ships registered in Cyprus together with information of the leasing contractual agreements (e.g. time, spot, dry) which were used in order to decide the economic ownership of these ships for the year 2012 (benchmark year). For the years back to 1995 and also for the more recent years, extrapolations were made using information on ships registered in the CY fleet (Cyprus flag) from the Deputy Ministry of Shipping (former Department of Merchant Shipping). Specifically, the growth rate of each type of ship under Cyprus flag were used for estimating the population of the economic owners for the rest of the years.

It should be noted that from 2015 and onwards, the stock of ships is updated using information concerning the registrations and de-registration of ships in CY entities (legal owners). This information is collected monthly from the IHS Fairplay database after CYSTAT and the CBC signed a contractual agreement (2014) with the IHS Fairplay database company. As described in the inventory, the great majority of CY legal owners of ships are at the same time the economic owners (spot and time leasing agreements). For some rare borderline cases, where further investigation is needed for the identification of the economic owner, this is carried out by the Foreign Trade department within CYSTAT using the criteria agreed in the TF on ship and aircrafts (Handbook on the compilation of statistics on sea and air transport in national accounts and balance of payments).

In conclusion, currently, for the updating of the ship-owners registry monthly information from IHS database is used and data regarding registration(imports) and de-registrations(exports) is consistent in National Accounts, FTS and BoP. The net value from imports-exports of ships is also included in the Gross Fixed Capital Formation.

The registry of Cyprus flag fleet was used as proxy indicator of the growth of the population of economic owners only for the years 2013 and 2014 since as described above from 2015 onwards the registry of ship owners is updated using information from the IHS Fairplay database. It was assumed at that time that since a significant number of Cyprus flag ships were legally and economically owned by CY companies it would be a good proxy for the growth of the fleet of economic owners.

After determining the population of the ships the economic owners of which are companies registered in Cyprus, CYSTAT used information from the survey on ship-owning conducted by the Central Bank of Cyprus, which covered those companies that have physical presence (around 60 ships from a population of around 1000 ships). The economic information gathered from the survey (output, IC) were stratified according to the technical characteristics of the ships (type, capacity, age) and used for the estimation of the Output/IC of the Total population.

The estimates for the **Consumption of Fixed Capital** are undertaken through the usage of the PIM, on an annual basis. Consumption of fixed capital is estimated on the basis of the stock of fixed assets and the expected average economic life of the different categories of those goods. For the calculation of the stock of fixed assets, the perpetual inventory method (PIM) is applied. For more information regarding the calculations of the PIM and the Consumption of Fixed Capital, see chapter 4.12.

The calculation of **Insurance output** is made on an annual basis, in accordance with the methodology described in chapter 16 of the ESA 2010. Insurance output is treated as a model as a specific formula/algorithm is applied. To obtain the Insurance output the formula is as follows:

Premiums earned
Plus premium supplements
Minus adjusted claims incurred

For more information regarding the calculations of the Insurance Output, see section 3.17.2.

3.6 The main approaches taken with respect to exhaustiveness

The main methods used in the production approach to ensure exhaustiveness are analysed in chapter 7. A list of these main methods is the following (types of non-exhaustiveness in parenthesis):

- 1) Employment method (N5)
- 2) Illegal activities (N2)
- 3) Income in kind & Tips (N7)
- 4) VAT fraud (N6)
- 5) Household Budget Survey and Ratios constructed from past surveys (N6)
- 6) SUT balancing procedure findings (N1 & N6)
- 7) Ad-hoc surveys and expert estimates (N3 & N6)
- 8) Production for own final consumption (N3 & N7)
- 9) Own-account construction (N3 & N7)

The summary table below provides an overview of the various exhaustiveness adjustments in the breakdown of NACE sections and types of non-exhaustiveness.

Table 3.6.1: Exhaustiveness adjustments to Value Added by NACE, 2017, € million

NACE	N1	N2	N3	N4	N5	N6	N7	TOTAL	%
A		12,2	9,3				9,5	30,9	2,6%
B								0,0	0,0%
C			0,6			1,8	7,7	10,1	0,9%
D							0,2	0,2	0,0%
E						0,0	1,4	1,4	0,1%
F			10,1			27,7	3,9	41,6	3,5%
G		31,9				12,1	12,0	56,0	4,7%
H						1,9	6,9	8,7	0,7%
I	36,5					73,2	44,1	153,8	13,0%
J						0,3	0,7	0,9	0,1%
K					13,0		0,3	13,4	1,1%
L							0,2	0,2	0,0%
L 68.2								0,0	0,0%
M						434,8	1,8	436,6	36,9%
N						1,5	35,9	37,5	3,2%
O								0,0	0,0%
P	25,4					51,9		77,3	6,5%
Q						76,3	0,3	76,7	6,5%
R						115,6		115,6	9,8%
S		42,0				70,8	0,6	113,5	9,6%
T						7,5		7,5	0,6%
TOTAL	61,9	86,1	19,9	0,0	13,0	875,5	125,4	1.181,9	100,0%
%	5,2%	7,3%	1,7%	0,0%	1,1%	74,1%	10,6%	100,0%	

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

Table 3.7.1: Description of NACE divisions, Section A

NACE Rev.2	Activity
01	Crop and animal production, hunting and related service activities
02	Forestry and logging
03	Fishing and aquaculture
A	Agriculture, forestry and fishing

The valuation of output and intermediate consumption in the Agricultural sector is primarily derived from the results of the various surveys/censuses conducted in Agricultural division in CYPSTAT and the administrative data provided by the various departments of Ministry of Agriculture, Rural Development and Environment and the Government Finance Statistics (GFS) section in CYPSTAT. Specifically, data on Crop, Livestock and Fishing is collected from the Economic Agricultural Accounts (EAA) that are produced from Agricultural section and data on Forestry (NACE 02) is collected from the GFS.

Table 3.7.2: Introductory Table, NACE Section A, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE A	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
01	710,1	384,0	326,1	86,7%	1,8%	1,6%	1,7%
02	18,9	2,4	16,5	4,4%	0,1%	0,1%	0,1%
03	53,2	19,4	33,7	9,0%	0,2%	0,2%	0,2%
A	782,2	405,9	376,3	100,0%	2,1%	1,9%	1,9%

The breakdown by NACE divisions and institutional sectors and the relevant shares are shown in the table below:

Table 3.7.3: NACE Section A by institutional sector, 2017

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
01	Output	53,7			656,4		710,1
	Interm. Consumption	35,5			348,5		384,0
	Gross Value Added	18,2	0,0	0,0	307,9	0,0	326,1
	% of sector in GVA	5,6%	0,0%	0,0%	94,4%	0,0%	100,0%
02	Output			17,4	1,5		18,9
	Interm. Consumption			1,8	0,6		2,4
	Gross Value Added	0,0	0,0	15,6	0,9	0,0	16,5
	% of sector in GVA	0,0%	0,0%	94,7%	5,3%	0,0%	100,0%
03	Output	19,4			33,7		53,2
	Interm. Consumption	9,3			10,1		19,4
	Gross Value Added	10,1	0,0	0,0	23,6	0,0	33,7
	% of sector in GVA	30,0%	0,0%	0,0%	70,0%	0,0%	100,0%
A	Output	73,1	0,0	17,4	691,6	0,0	782,2
	Interm. Consumption	44,8	0,0	1,8	359,2	0,0	405,9
	Gross Value Added	28,3	0,0	15,6	332,4	0,0	376,3
	% of sector in GVA	7,5%	0,0%	4,1%	88,3%	0,0%	100,0%

Basis for NA figures**Administrative records**

Data on Forestry is obtained from the Government Finance Statistics section in CYPSTAT. More specifically, the production of Forestry of the Ministry of Agriculture, Rural Development and Environment is attributed to NACE 02. The procedure followed for the production of the data is the same followed for the rest of the Central Government subsector as described in section 3.21.

Combined data

The characteristic feature of the valuations in the domains of Agriculture is the product-by-product approach to accounting. The value of crop, animal and fishing production is not normally assessed directly through the producers but is calculated by assessing the total quantities produced at their respective prices (the quantity-price method). Production inputs in agriculture, animal and fishing (i.e. seed and fertilizers as well as other inputs like packing materials, fuels, repairs of machinery and buildings etc.) are derived from the various surveys conducted, the available administrative data and

other sources. The same applies to other intermediate inputs like administrative expenses and rentals.

As mentioned above, the agricultural production for the private sector is derived from annual sample surveys and administrative data. Information on agricultural areas were also obtained from the Census of Agriculture 2010 and from the Cyprus Agricultural Payments Organization (CAPO). This information is updated every 3 years during the results of a Farm Structure Survey which is conducted based on the same regulation and structure as the Census. The annual surveys on Cereals, Vineyards and Crops are also used to obtain information in areas, production and prices. Furthermore, the annual survey conducted specifically for the compilation of the economic accounts of agriculture by the Agricultural Statistics section of CYSTAT collects information on output and intermediate consumption for various domains of Agriculture.

The overall valuation of agricultural production is normally effected by means of the quantity-price method for individual products. Secondary output of agricultural products in other branches is excluded from agricultural output in order to avoid double counting because is not collected by the other surveys. There are specific instructions to enumerators to exclude any agricultural output.

The valuation of the quantity of harvested crops, which is effected on the basis of the total area sown with each crop and the respective average yields, is also used as a mean of calculating total crop production in special cases where the available information is limited. Any losses are deducted from the production. Therefore, the value of output includes the production of characteristic agricultural products and other ancillary output produced during a calendar year irrespective of whether these products are sold to others, consumed, held as stock, or used for further processing by farmers. For the case of animal production, data on quantities supplied to dairies and slaughterhouses is used, since such purchasers or users are required to submit returns. Additional information is required for products consumed by farmers' families and for installations developed by farmers themselves (own-account fixed-capital formation) and the extent of any changes in inventories.

Crop Production

The total crop production is estimated by the Agricultural Statistics section of CYSTAT by taking into account the following data information:

- a) Quantity and Value of agricultural products which is collected from the annual survey conducted for the compilation of the economic accounts of agriculture, where specific questionnaires are mailed to industrial companies, enterprises and cooperatives.

- b) Goods used by the manufacturing industries as intermediate inputs; the results of the economic accounts of agriculture survey regarding the use of agricultural products in Industry.
- c) Goods retained by farmers to be used as inputs (seeds), other use (production of secondary products), or for own consumption (food). Factors, based on the total area and/or the total production and prices are used to estimate these figures when these results are not available from the annual surveys on Cereals, Vineyards and Crops.
- d) The surveys on cereals, vineyards and crops which cover the agricultural area (main and harvested), the production and the producer price on cereals, grapes (wine and table) and crop products.
- e) Information from administrative sources (Ministry of Agriculture, Rural Development and Environment, Cyprus Cooperatives Growers Marketing Union, etc.) for certain important agricultural products (cereals, grapes, potatoes and carobs) is also obtained.
- f) The production of flowers and plants, which is calculated based on information collected from the annual survey on flowers conducted by the Agricultural Statistics section, taking also into account the information for quantities supplied by the respective Department within the Ministry of Agriculture, Rural Development and Environment. Information on quantities and prices is also obtained from the survey on Nurseries.

The above process of estimating the total crop production is validated within the Agricultural Statistics section using information from the area and yield approach. Moreover, the data from the Foreign Trade statistics for all agricultural products are also used in the calculation of crop production (quantity and value).

It should be noted that, data concerning wine and olive oil production are excluded from Agricultural Output provided to National Accounts as they are part of the Industrial Output. However, these figures are included in the Economic Agricultural Accounts (EAA).

Table 3.7.4: Bridge table EAA / NA, € million

	EAA	NA	Remarks
Crop Output	235,0	235,0	Including exhaustiveness adjustment for own-consumption (N7)
Wine Output	25,8	-	NA includes this output in NACE C
Olive Oil Output	11,6	-	NA includes this output in NACE C
Own account construction	12,7	3,0	Revised by NA to exclude irrelevant value of materials and labour cost
Animal Output (excl. hunting)	396,0	396,0	Including exhaustiveness adjustment for own-consumption (N7)
Hunting	14,9	14,9	Exhaustiveness adjustment (N3)
Forestry	-	18,9	Government Finance Statistics (public) & Agricultural division (private)
Fishing	-	53,2	Including exhaustiveness adjustment for own-consumption (N7) & sport fishing (N3)
Secondary Output	27,6	27,6	Including exhaustiveness adjustment for own-consumption (N7)
Illegal activities	-	12,2	Exhaustiveness adjustment (N2)
Holding Gains & R&D	-	-0,7	Other conceptual adjustments
Net taxes on products (D.214-D.31)	-	16,2	Other conceptual adjustment
Balancing	-	5,9	
TOTAL (excl. Wine & Olive Oil Output)	686,1	782,2	

Animal Production

For the animal production, the Agricultural Statistics section uses administrative data from slaughterhouses on the number of animals slaughtered and the average price per ton by type of animal is also used for estimating the value of animals' slaughtered. The animal stock comprises of Cattle, Sheep and lambs, Goats and kids, Pigs, Poultry, Rabbits and is derived from administrative data produced from the Ministry of Agriculture, Rural Development and Environment, via annual surveys conducted and authorised by CYPSTAT.

Milk & Egg Production

Annual milk production of sheep, goats and cattle, is derived from the annual surveys on Cattles, Sheep and Goats conducted by the Ministry of Agriculture, Rural Development and Environment, and the final data is provided to Agricultural Statistics section of CYPSTAT. To estimate the value of milk

production, an average producer price is applied on the derived milk quantity. The producer price is calculated on the basis of information obtained by the milk processing industries.

The same approach as above is used for the estimation of egg production value. The quantity of eggs is provided from the Ministry of Agriculture, Rural Development and Environment and an average price is used to estimate the total value of egg production.

Secondary production

Processing of agricultural products (secondary production) consists mainly of milk products (halloumi, yoghurt, etc.) and to a lesser amount of grape products (wine, zivania, raisins, etc.). The former estimations are made by the Agricultural Statistics section of CYSTAT based on factors obtained from previous surveys. For the grape products data are also obtained from the results of the annual vineyard survey.

Extrapolation and Models

For the case of General Government (NACE 02), the estimates of the consumption of fixed capital obtained from the Perpetual Inventory Model (PIM) are included under extrapolation and models data.

Table 3.7.5: Summary, Extrapolation and Models - PIM, NACE 02, 2017

		€ million
P1	Output	2,3
P2	Intermediate Consumption	0,0
B1g	Gross Value added	2,3

Exhaustiveness Adjustments to the basis for NA figures

Apart from the conceptual adjustments (see section 3.4) and the Balancing (see chapter 6), the following exhaustiveness adjustments are made:

Adjustments due to illegal activities

Adjustments are made in the national accounts framework, in particular for the production of narcotics. For more details, see chapter 7.1.3.

Adjustments due to production for own final use (N3)

Adjustments are made in the national accounts framework, in particular for the production for own final regarding Hunting, for Own Consumption of agricultural products and for own-account construction in Agriculture. For more details, see chapter 7.

Adjustment due to VAT fraud (N6)

VAT fraud (without complicity) represents the adjustment made to the output in the framework of the Supply and Use balancing procedure. For more details, see chapter 7.1.3.

After SUT balancing procedure is completed, VAT fraud is calculated for all NACE activities based on qualitative and quantitative information received from Tax department. This information includes data on the outcome of Tax dept audits to the various enterprises from all the sectors of the economy. For reference year 2017, audits for the year 2015 were used, where they did not provide any indication for significant VAT fraud for activity NACE "A". Moreover, the VAT average rate for the agricultural products is very low 5%, which is another reason of almost zero VAT fraud in this sector.

A summary outline of the adjustments to the Basis for NA Figures is presented in the following table:

Table 3.7.6: Summary of conceptual and exhaustiveness adjustments, NACE A, 2017 (€ million)

Type of adjustment	Output	Intermediate consumption	Gross value added
Allocation of FISIM	0,0	16,3	-16,3
Allocation of Insurance Output	0,0	6,4	-6,4
Other Conceptual	15,5	0,0	15,5
R&D	0,1	0,0	0,1
Holding Gains	-0,7	0,0	-0,7
Net Taxes	16,2	0,0	16,2
Exhaustiveness	44,9	14,0	30,9
Narcotics (N2)	12,2	0,0	12,2
Own Consumption - Hunting (N3)	15,1	5,8	9,3
Vat Fraud (N6)	0,0	0,0	0,0
Own Consumption - Agricultural products (N7)	14,6	7,2	7,3
Own Contruction (N7)	3,0	0,9	2,1
Balancing	5,9	1,1	4,8
Total adjustments in NACE A	66,3	37,8	28,5

A summary of the Final estimate is presented in the following table:

Table 3.7.7: Summary, NACE Section A, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	715,8	368,1	347,8
Surveys and censuses	0,0	0,0	0,0
Administrative records	15,2	1,8	13,4
Combined data	698,4	366,3	332,2
Extrapolation and models	2,3	0,0	2,3
Adjustments	66,3	37,8	28,5
Data validation	0,0	0,0	0,0
Allocation of FISIM	0,0	16,3	-16,3
Allocation of Insurance Output	0,0	6,4	-6,4
Other conceptual	15,5	0,0	15,5
Exhaustiveness	44,9	14,0	30,9
Balancing	5,9	1,1	4,8
Final estimate	782,2	405,9	376,3

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

Table 3.8.1: Description of NACE divisions, Section B

NACE Rev.2	Activity
05-09	Mining and quarrying
B	Mining and quarrying

The values for output, intermediate consumption and value added by NACE divisions for Mining and Quarrying are shown in the table below:

Table 3.8.2: Introductory Table, NACE Section B, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE B	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
05-09	77,3	59,9	17,4	100,0%	0,1%	0,1%	0,1%
B	77,3	59,9	17,4	100,0%	0,1%	0,1%	0,1%

The breakdown by NACE divisions and institutional sectors and the relevant shares are shown in the table below:

Table 3.8.3: NACE Section B by institutional sector, 2017

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
05-09	Output	70,2			7,1		77,3
	Interm. Consumption	55,1			4,8		59,9
	Gross Value Added	15,1	0,0	0,0	2,2	0,0	17,4
	% of sector in GVA	87,1%	0,0%	0,0%	12,9%	0,0%	100,0%
B	Output	70,2	0,0	0,0	7,1	0,0	77,3
	Interm. Consumption	55,1	0,0	0,0	4,8	0,0	59,9
	Gross Value Added	15,1	0,0	0,0	2,2	0,0	17,4
	% of sector in GVA	87,1%	0,0%	0,0%	12,9%	0,0%	100,0%

Basis for NA figures

Surveys & Censuses

The main data source is the annual economic survey ("Industrial Production Survey"), which produces statistical data related to employment, output, value added, expenses and investments by economic activity based on the Statistical Classification of Economic Activities (NACE Rev.2). The survey of 2017 was conducted through personal interviews. It was carried out on a sampling basis for the enterprises employing less than 20 persons, while it covered all enterprises engaging 20 persons and over. The sample was based on the 2017 Business Register and was selected on a PPS basis (probability proportional to size). It was stratified by employment size group and by NACE. The unit of enumeration was the "enterprise".

Output in the domains of mining and quarrying comprises the following components (aggregated baseline statistics, including specific adjustments to comply with national accounting):

Table 3.8.4: Output, NACE Section B, 2017

	(€ million)
Turnover from Industrial Activities	73,7
+ Turnover from services Activities	2,5
+ Sales of goods for resale	0,0
+ Income from rentals	0,1
+ Income from commissions	0,0
= Total turnover	76,4
+ Other operating income	0,4
- Value of goods purchased for resale	0,0
+ Change in stocks	0,5
+ Value of capital goods produced for own use	0,0
= Output	77,3
- Intermediate consumption	56,7
= Gross Value Added	20,6

Intermediate consumption is the sum of direct costs, administrative costs and rentals, which is obtained from the annual economic survey. In the Survey, direct production expenses mainly cover raw and packing materials, fuels and lubricants, the cost of stationery and other materials, electricity and heating expenses, transport costs as well as repairs and other maintenance expenses. Under this category the payments for services rendered are also included. Administrative

expenses include the cost of telephones, postage, legal and accounting services as well as other service costs, such as technical and consultancy services, advertising and entertainment expenses, bank charges etc.

The sales value of quarrying materials is as follows:

Table 3.8.5: Quarrying materials by product and support services, 2017

	(€ million)	(%)
Ornamental and building Stone	1,1	1,5%
Limestone and gypsum	5,4	7,3%
Gravel and sand	43,0	58,4%
Clays and kaolin, Chemical and fertiliser minerals	3,5	4,8%
Other materials and support services	20,6	28,0%
Total	73,7	100,0%

Note: Other materials refers to: Articles of concrete, cement and plaster, Secondary raw materials, Other chemical products, Cement, lime and plaster, etc.

The results of the annual economic survey (Industrial survey) are used to calculate the amount of intermediate consumption. The survey contains data on output as well as intermediate consumption for all enterprises within the domain NACE 05-09. Since the activity mining and quarrying covers a small number of producing units a full coverage is achieved with the annual survey.

It should be noted that Mineral exploration activity is treated as GFCF. For more details, see chapter 5.10.

An overall summary outline of mining and quarrying (NACE Section B) with all the adjustments made is presented in the following table. For more details about other conceptual adjustments see Table 3.4.1.

Table 3.8.6: Summary, NACE Section B, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	77,3	56,7	20,6
Surveys and censuses	77,3	56,7	20,6
Administrative records	0,0	0,0	0,0
Combined data	0,0	0,0	0,0
Extrapolation and models	0,0	0,0	0,0
Adjustments	0,0	3,2	-3,2
Data validation	0,0	0,0	0,0
Allocation of FISIM	0,0	1,8	-1,8
Allocation of Insurance Output	0,0	1,2	-1,2
Other conceptual	0,0	0,6	-0,6
Exhaustiveness	0,0	0,0	0,0
Balancing	0,0	-0,5	0,5
Final estimate	77,3	59,9	17,4

3.9 Manufacturing (NACE Rev. 2 Section C)

Table 3.9.1: Description of NACE divisions, Section C

NACE Rev.2	Activity
10-12	Manufacture of food products, beverages and tobacco products
13-15	Manufacture of textiles, wearing apparel and leather products
16	Manufacture of wood and of products of wood and cork, except furniture, manufacture of articles of straw and plaiting materials
17	Manufacture of paper and paper products
18	Printing and reproduction of recorded media
19	Manufacture of coke and refined petroleum products
20	Chemical industry
21	Manufacture of pharmaceutical products
22	Manufacture of rubber and plastic products
23	Manufacture of other non-metallic mineral products
24	Manufacture of basic metals
25	Manufacture of fabricated metal products, except machinery and equipment
26	Manufacture of computer, electronic and optical products
27	Manufacture of electrical equipment
28	Manufacture of machinery and equipment n.e.c.
29	Manufacture of motor vehicles, trailers and semi-trailers
30	Manufacture of other transport equipment
31-32	Manufacture of furniture, Other manufacturing
33	Repair and installation of machinery and equipment
C	Manufacturing

The values for output, intermediate consumption and value added by NACE divisions for Manufacturing are shown in the table below:

Table 3.9.2: Introductory Table, NACE Section C, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE C	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
10-12	1.278,0	957,5	320,5	32,4%	1,8%	1,6%	1,6%
13-15	38,2	23,2	15,0	1,5%	0,1%	0,1%	0,1%
16	114,4	68,9	45,5	4,6%	0,3%	0,2%	0,2%
17	52,4	35,9	16,5	1,7%	0,1%	0,1%	0,1%
18	66,1	39,5	26,5	2,7%	0,2%	0,1%	0,1%
19	2,3	1,1	1,2	0,1%	0,0%	0,0%	0,0%
20	56,2	32,9	23,3	2,3%	0,1%	0,1%	0,1%
21	239,6	114,8	124,8	12,6%	0,7%	0,6%	0,6%
22	83,7	56,8	26,8	2,7%	0,2%	0,1%	0,1%
23	324,5	215,5	109,0	11,0%	0,6%	0,5%	0,6%
24	57,1	39,8	17,3	1,7%	0,1%	0,1%	0,1%
25	257,9	173,6	84,3	8,5%	0,5%	0,4%	0,4%
26	28,9	13,8	15,1	1,5%	0,1%	0,1%	0,1%
27	28,7	18,4	10,2	1,0%	0,1%	0,1%	0,1%
28	53,5	29,9	23,6	2,4%	0,1%	0,1%	0,1%
29	9,6	5,5	4,1	0,4%	0,0%	0,0%	0,0%
30	3,8	2,2	1,5	0,2%	0,0%	0,0%	0,0%
31-32	83,5	47,1	36,4	3,7%	0,2%	0,2%	0,2%
33	172,2	83,2	88,9	9,0%	0,5%	0,4%	0,5%
C	2.950,5	1.959,7	990,8	100,0%	5,6%	4,9%	5,0%

As it can be seen from the Introductory table, manufacturing of food products, beverages and tobacco products (NACEs 10-12) is the largest activity within this section.

The breakdown by NACE divisions and institutional sectors and the relevant shares are shown in the table below:

Table 3.9.3: NACE Section C by institutional sector, 2017

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
10-12	Output	1.225,0			53,0		1.278,0
	Interm. Consumption	924,9			32,6		957,5
	Gross Value Added	300,1	0,0	0,0	20,4	0,0	320,5
	% of sector in GVA	93,6%	0,0%	0,0%	6,4%	0,0%	100,0%
13-15	Output	25,9			12,3		38,2
	Interm. Consumption	16,3			6,9		23,2
	Gross Value Added	9,6	0,0	0,0	5,4	0,0	15,0
	% of sector in GVA	64,1%	0,0%	0,0%	35,9%	0,0%	100,0%
16	Output	90,8			23,6		114,4
	Interm. Consumption	57,4			11,5		68,9
	Gross Value Added	33,4	0,0	0,0	12,1	0,0	45,5
	% of sector in GVA	73,4%	0,0%	0,0%	26,6%	0,0%	100,0%
17	Output	52,4		0,0	0,0		52,4
	Interm. Consumption	35,9		0,0	0,0		35,9
	Gross Value Added	16,5	0,0	0,0	0,0	0,0	16,5
	% of sector in GVA	100,0%	0,0%	0,0%	0,0%	0,0%	100,0%
18	Output	55,3			10,8		66,1
	Interm. Consumption	34,7			4,9		39,5
	Gross Value Added	20,6	0,0	0,0	5,9	0,0	26,5
	% of sector in GVA	77,7%	0,0%	0,0%	22,3%	0,0%	100,0%
19	Output	2,3					2,3
	Interm. Consumption	1,1					1,1
	Gross Value Added	1,2	0,0	0,0	0,0	0,0	1,2
	% of sector in GVA	100,0%	0,0%	0,0%	0,0%	0,0%	100,0%

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
20	Output	56,2					56,2
	Interm. Consumption	32,9					32,9
	Gross Value Added	23,3	0,0	0,0	0,0	0,0	23,3
	% of sector in GVA	100,0%	0,0%	0,0%	0,0%	0,0%	100,0%
21	Output	239,6					239,6
	Interm. Consumption	114,8					114,8
	Gross Value Added	124,8	0,0	0,0	0,0	0,0	124,8
	% of sector in GVA	100,0%	0,0%	0,0%	0,0%	0,0%	100,0%
22	Output	71,0			12,7		83,7
	Interm. Consumption	49,5			7,3		56,8
	Gross Value Added	21,5	0,0	0,0	5,4	0,0	26,8
	% of sector in GVA	80,0%	0,0%	0,0%	20,0%	0,0%	100,0%
23	Output	303,0			21,5		324,5
	Interm. Consumption	204,1			11,4		215,5
	Gross Value Added	98,9	0,0	0,0	10,1	0,0	109,0
	% of sector in GVA	90,8%	0,0%	0,0%	9,2%	0,0%	100,0%
24	Output	57,1					57,1
	Interm. Consumption	39,8					39,8
	Gross Value Added	17,3	0,0	0,0	0,0	0,0	17,3
	% of sector in GVA	100,0%	0,0%	0,0%	0,0%	0,0%	100,0%
25	Output	226,0			32,0		257,9
	Interm. Consumption	156,5			17,1		173,6
	Gross Value Added	69,4	0,0	0,0	14,9	0,0	84,3
	% of sector in GVA	82,3%	0,0%	0,0%	17,7%	0,0%	100,0%

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
26	Output	28,9					28,9
	Interm. Consumption	13,8					13,8
	Gross Value Added	15,1	0,0	0,0	0,0	0,0	15,1
	% of sector in GVA	100,0%	0,0%	0,0%	0,0%	0,0%	100,0%
27	Output	28,7					28,7
	Interm. Consumption	18,4					18,4
	Gross Value Added	10,2	0,0	0,0	0,0	0,0	10,2
	% of sector in GVA	100,0%	0,0%	0,0%	0,0%	0,0%	100,0%
28	Output	42,8			10,7		53,5
	Interm. Consumption	24,5			5,4		29,9
	Gross Value Added	18,3	0,0	0,0	5,3	0,0	23,6
	% of sector in GVA	77,4%	0,0%	0,0%	22,6%	0,0%	100,0%
29	Output	8,7			0,9		9,6
	Interm. Consumption	4,9			0,5		5,5
	Gross Value Added	3,8	0,0	0,0	0,4	0,0	4,1
	% of sector in GVA	91,2%	0,0%	0,0%	8,8%	0,0%	100,0%
30	Output	3,8					3,8
	Interm. Consumption	2,2					2,2
	Gross Value Added	1,5	0,0	0,0	0,0	0,0	1,5
	% of sector in GVA	100,0%	0,0%	0,0%	0,0%	0,0%	100,0%
31-32	Output	73,9			9,6		83,5
	Interm. Consumption	40,8			6,2		47,1
	Gross Value Added	33,1	0,0	0,0	3,3	0,0	36,4
	% of sector in GVA	90,9%	0,0%	0,0%	9,1%	0,0%	100,0%
33	Output	157,9			14,3		172,2
	Interm. Consumption	74,9			8,3		83,2
	Gross Value Added	83,0	0,0	0,0	6,0	0,0	88,9
	% of sector in GVA	93,3%	0,0%	0,0%	6,7%	0,0%	100,0%

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
C	Output	2.749,2	0,0	0,0	201,3	0,0	2.950,5
	Interm. Consumption	1.847,5	0,0	0,0	112,2	0,0	1.959,7
	Gross Value Added	901,7	0,0	0,0	89,1	0,0	990,8
	% of sector in GVA	91,0%	0,0%	0,0%	9,0%	0,0%	100,0%

Basis for NA figures

Surveys & Censuses

The main data source is the annual economic survey (“Industrial Production Survey”), which produces statistical data related to employment, output, value added, expenses and investments by economic activity based on the Statistical Classification of Economic Activities (NACE Rev.2). The survey of 2017 was conducted through personal interviews. It was carried out on a sampling basis for the enterprises employing less than 20 persons, while it covered all enterprises engaging 20 persons and over. The sample was based on the 2017 Business Register and was selected on a PPS basis (probability proportional to size). It was stratified by employment size group and by NACE. The unit of enumeration was the “enterprise”. The sample size for the 2017 survey was 1.340 enterprises. It should be noted that, wine production is also covered under the above mentioned survey and the results are provided to Agricultural division for EAA purposes only.

Furthermore, there are two cases where estimations are made exogenously.

The first case is for the output of olive oil (NACE 10.4). For the estimation of the output of olive oil, the quantities of olives are obtained from the Agricultural division. To this number a yield is applied to calculate the quantity of olive oil extraction from the refineries. With the use of prices, the gross output in value terms is derived and then based on output the intermediate inputs are proportionally allocated. The results are processed by the Industrial division of the CYPSTAT before their incorporation in the national accounts.

The second case is for the output in slaughterhouses and meat processing (NACE 10.1). Private and local-authority slaughterhouses provide an important information source for slaughterhouse and meat processing estimates that are used to make a supplementary functional estimate of contract slaughtering. With the aid of the slaughter statistics (data collected by the Veterinary services), the weight of live animal purchases is distributed over different sales categories.

The composition of output for 2017 in the domains of manufacturing, as obtained from the economic survey comprises the following components (aggregated baseline statistics, excluding specific adjustments to comply with national accounting). The foremost part of the output is obtained from the services rendered.

Table 3.9.4: Output, NACE Section C (excl. Cottage industry), 2017

	(€ million)
Turnover from Industrial Activities	2.891,6
+ Turnover from services Activities	45,5
+ Sales of goods for resale	463,7
+ Income from rentals	9,3
+ Income from commissions	1,2
= Total turnover	3.411,4
+ Other operating income	5,6
- Value of goods purchased for resale	364,7
+ Change in stocks	15,9
+ Value of capital goods produced for own use	5,8
= Output	3.074,0
- Intermediate consumption	1.956,3
= Gross Value Added	1.117,7

Intermediate consumption is the sum of direct costs, administrative costs and rentals, which is obtained from the annual economic survey. In the Survey, direct production expenses mainly cover raw and packing materials, fuels and lubricants, the cost of stationery and other materials, electricity and heating expenses, transport costs as well as repairs and other maintenance expenses. Under this category the payments for services rendered are also included. Administrative expenses include the cost of telephones, postage, legal and accounting services as well as other service costs, such as technical and consultancy services, advertising and entertainment expenses, bank charges etc.

The intermediate consumption of manufacturing enterprises is structured as follows (aggregate of baseline statistics):

Table 3.9.5: Intermediate Consumption, NACE Section C , 2017

	€ (million)	(%)	
		Intermediate consumption	Output
Direct production expenses	1.812,2	92,6%	59,0%
Administrative and other non-industrial expenses	107,2	5,5%	3,5%
Rentals	36,8	1,9%	1,2%
Total intermediate consumption	1.956,3	100,0%	63,6%

Conceptual Adjustments to the basis for NA figures

As it is described in section 3.4, a number of conceptual adjustments are made in order to ensure the transition from private to national accounting concepts. For Manufacturing, the most important conceptual adjustment concerns the relocation to trade where a specific amount from the Turnover is related to Wholesale Trade. It was decided to transfer an amount of “excess output due to trading activity” from each activity to section “G” for better macroeconomic conformity, between years. For the estimation of the relevant intermediate inputs the intermediate consumption/output ratio that derived from the respective survey was used. The output figures that are deducted from each activity are obtained from the annual economic survey and refer to the Gross Margin from resale of goods. This item concerns sales of products that are produced or, in some cases, resale of products that are imported.

Table 3.9.6: Relocation to trade, 2017

NACE Rev.2	Description of activity	Output	Intermediate consumption	Gross value added
10-12	Manufacture of food products, beverages and tobacco products	-64,3	-46,2	-18,2
13-15	Manufacture of textiles, wearing apparel and leather products	-1,3	-0,8	-0,5
16	Manufacture of wood and of products of wood and cork, except furniture, manufacture of articles of straw and plaiting materials	-0,9	-0,5	-0,4
17	Manufacture of paper and paper products	-0,6	-0,4	-0,2
18	Printing and reproduction of recorded media	-0,1	-0,1	0,0
19	Manufacture of coke and refined petroleum products	0,0	0,0	0,0
20	Chemical industry	-7,8	-4,4	-3,4
21	Manufacture of pharmaceutical products	-0,9	-0,4	-0,5
22	Manufacture of rubber and plastic products	-5,5	-3,7	-1,9
23	Manufacture of other non-metallic mineral products	-3,9	-2,5	-1,4
24	Manufacture of basic metals	-2,4	-1,6	-0,8
25	Manufacture of fabricated metal products, except machinery and equipment	-5,8	-3,8	-2,0
26	Manufacture of computer, electronic and optical products	0,0	0,0	0,0
27	Manufacture of electrical equipment	-0,9	-0,5	-0,3
28	Manufacture of machinery and equipment n.e.c	-2,4	-1,3	-1,1
29	Manufacture of motor vehicles, trailers and semi-trailers	-0,3	-0,2	-0,1
30	Manufacture of other transport equipment	0,0	0,0	0,0
31-32	Manufacture of furniture, Other manufacturing	-6,3	-3,5	-2,9
33	Repair and installation of machinery and equipment	-0,8	-0,4	-0,4
	Total amount of relocation to Manufacturing	-104,2	-70,1	-34,1

Exhaustiveness Adjustments to the basis for NA figures

Apart from the conceptual adjustments (see chapter 3.4) and the Balancing (see chapter 6), the following exhaustiveness adjustments are made:

Adjustment due to Cottage Industry (N3)

An exhaustiveness adjustment is made for the Cottage Industry production (mainly hand-woven articles, potteries and baskets). For more details see chapter 7.

Adjustment due to VAT fraud (N6)

VAT fraud (without complicity) represents the adjustment made to the output in the framework of the Supply and Use balancing procedure. For more details see chapter 7.1.3.

Adjustment due to wages and salaries in kind (N7)

This exhaustiveness adjustment is performed in order to subtract from the intermediate consumption the value of fuels consumed for the private use of company cars. The calculation method for this income in kind is described in detail in chapter 7.1.3.

It should be noted that no adjustment is made for production of illegal drugs, since synthetic drugs are not produced in Cyprus. No such activity has appeared in police records so far.

A summary of total adjustments is presented in the following table:

Table 3.9.7: Summary of total adjustments, NACE C, 2017 (€ million)

Type of adjustment	Output	Intermediate consumption	Gross value added
Allocation of FISIM	0,0	71,8	-71,8
Allocation of Insurance Output	0,0	12,5	-12,5
Other Conceptual	-126,1	-64,3	-61,8
Holding Gains	-1,0	5,8	-6,8
Net taxes on products	-37,8	0,0	-37,8
R&D	17,0	0,0	17,0
Relocation to trade	-104,2	-70,1	-34,1
Exhaustiveness	2,5	-7,5	10,1
Cottage industry (N3)	0,8	0,2	0,6
VAT fraud (N6)	1,8	0,0	1,8
Wages & salaries in kind (N7)	0,0	-7,7	7,7
Balancing	0,0	-9,0	9,0
Total adjustments in NACE C	-123,5	3,5	-127,0

An overall summary for NACE Section C is presented in the following table:

Table 3.9.8: Summary, NACE Section C, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	3.074,0	1.956,3	1.117,7
Surveys and censuses	3.074,0	1.956,3	1.117,7
Administrative records	0,0	0,0	0,0
Combined data	0,0	0,0	0,0
Extrapolation and models	0,0	0,0	0,0
Adjustments	-123,5	3,5	-127,0
Data validation	0,0	0,0	0,0
Allocation of FISIM	0,0	71,8	-71,8
Allocation of Insurance Output	0,0	12,5	-12,5
Other conceptual	-126,1	-64,3	-61,8
Exhaustiveness	2,5	-7,5	10,1
Balancing	0,0	-9,0	9,0
Final estimate	2.950,5	1.959,7	990,8

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

Table 3.10.1: Description of NACE divisions, Section D

NACE Rev.2	Activity
35	Electricity, gas, steam and air-conditioning supply
D	Electricity, gas, steam and air-conditioning supply

The values for output, intermediate consumption and value added for NACE division “Electricity, gas, steam and air conditioning supply” are shown in the table below:

Table 3.10.2: Introductory Table, NACE Section D, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE D	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
35	657,1	434,2	222,9	100,0%	1,3%	1,1%	1,1%
D	657,1	434,2	222,9	100,0%	1,3%	1,1%	1,1%

The breakdown by NACE divisions and institutional sectors and the relevant shares are shown in the table below:

Table 3.10.3: NACE Section D by institutional sector, 2017

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
35	Output	657,1					657,1
	Interm. Consumption	434,2					434,2
	Gross Value Added	222,9	0,0	0,0	0,0	0,0	222,9
	% of sector in GVA	100,0%	0,0%	0,0%	0,0%	0,0%	100,0%
D	Output	657,1	0,0	0,0	0,0	0,0	657,1
	Interm. Consumption	434,2	0,0	0,0	0,0	0,0	434,2
	Gross Value Added	222,9	0,0	0,0	0,0	0,0	222,9
	% of sector in GVA	100,0%	0,0%	0,0%	0,0%	0,0%	100,0%

Basis for NA figures

Surveys & Censuses

This section covers the activity of providing electric power, natural gas, steam supply and hot water supply through a permanent infrastructure (network) of lines mains and pipes.

The annual economic survey (“Industrial Production Survey”) of enterprises in the domain of electricity (NACE 35) is used to determine output. The survey covers the Electricity Authority of Cyprus and a sample of enterprises producing electricity from renewable energy sources. It excludes electricity producing plants of other industries, which are included in the corresponding divisions.

The output, as obtained from the annual economic survey is made up as follows:

Table 3.10.4: Output, NACE Section D, 2017

	(€ million)
Turnover from Industrial Activities	658,9
+ Turnover from services Activities	9,7
+ Sales of goods for resale	0,5
+ Income from rentals	0,0
+ Income from commissions	0,0
= Total turnover	669,1
+ Other operating income	24,7
- Value of goods purchased for resale	0,3
+ Change in stocks	0,0
+ Value of capital goods produced for own use	9,0
= Output	702,5
- Intermediate consumption	414,4
= Gross Value Added	288,2

Intermediate consumption is the sum of direct costs, administrative costs and rentals, which is obtained from the annual economic survey. In the Survey, direct production expenses mainly cover raw and packing materials, fuels and lubricants, the cost of stationery and other materials, electricity and heating expenses, transport costs as well as repairs and other maintenance expenses. Under this category the payments for services rendered are also included. Administrative expenses include the cost of telephones, postage, legal and accounting services as well as other service costs, such as technical and consultancy services, advertising and entertainment expenses, bank charges etc.

Table 3.10.5: Intermediate Consumption, NACE Section D, 2017

	€ (million)	(%)	
		Intermediate consumption	Output
Direct production expenses	404,6	97,6%	57,6%
Administrative and other non-industrial expenses	9,2	2,2%	1,3%
Rentals	0,6	0,1%	0,1%
Total intermediate consumption	414,4	100,0%	59,0%

Exhaustiveness Adjustments to the basis for NA figures

Apart from the conceptual adjustments (see section 3.4) and the Balancing (see chapter 6), the following exhaustiveness adjustments are made:

Adjustment due to wages and salaries in kind (N7)

This exhaustiveness adjustment is performed in order to subtract from the intermediate consumption the value of fuels consumed for the private use of company cars. The calculation method for this income in kind is described in detail in chapter 7.1.3.

A summary of other conceptual adjustments is presented in the following table:

Table 3.10.6: Summary of total adjustments, NACE D, 2017 (€ million)

Type of adjustment	Output	Intermediate consumption	Gross value added
Allocation of FISIM	0,0	16,4	-16,4
Allocation of Insurance Output	0,0	3,2	-3,2
Other Conceptual	-45,4	16,8	-62,3
Holding Gains	0,0	16,9	-16,9
Net taxes on products	-45,8	0,0	-45,8
R&D	0,6	0,0	0,6
Relocation to trade	-0,2	-0,1	-0,1
Exhaustiveness	0,0	-0,2	0,2
Wages & salaries in kind (N7)	0,0	-0,2	0,2
Balancing	0,0	-16,3	16,3
Total adjustments in NACE D	-45,4	19,8	-65,3

An overall summary for NACE Section D is presented in the following table:

Table 3.10.7: Summary, NACE Section D, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	702,5	414,4	288,2
Surveys and censuses	702,5	414,4	288,2
Administrative records	0,0	0,0	0,0
Combined data	0,0	0,0	0,0
Extrapolation and models	0,0	0,0	0,0
Adjustments	-45,4	19,8	-65,3
Data validation	0,0	0,0	0,0
Allocation of FISIM	0,0	16,4	-16,4
Allocation of Insurance Output	0,0	3,2	-3,2
Other conceptual	-45,4	16,8	-62,3
Exhaustiveness	0,0	-0,2	0,2
Balancing	0,0	-16,3	16,3
Final estimate	657,1	434,2	222,9

3.11 Water Supply, Sewerage Waste Management and Remediation Activities (NACE Rev.2 Section E)

Table 3.11.1: Description of NACE divisions, Section E

NACE Rev.2	Activity
36	Water collection, treatment and supply
37-39	<i>Sewerage, waste collection, treatment and disposal activities, materials recovery, remediation activities and other waste management services</i>
E	Water supply, sewerage waste management and remediation activities

The values for output, intermediate consumption and value added by NACE divisions for Water Supply, Sewerage Waste Management and Remediation Activities are shown in the table below:

Table 3.11.2: Introductory Table, NACE Section E, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE E	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
36	98,2	68,4	29,8	20,1%	0,2%	0,1%	0,2%
37-39	215,8	97,7	118,1	79,9%	0,7%	0,6%	0,6%
E	314,0	166,1	147,9	100,0%	0,8%	0,7%	0,8%

The breakdown by NACE divisions and institutional sectors and the relevant shares are shown in the table below:

Table 3.11.3: NACE Section E by institutional sector, 2017

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
36	Output	98,2					98,2
	Interm. Consumption	68,4					68,4
	Gross Value Added	29,8	0,0	0,0	0,0	0,0	29,8
	% of sector in GVA	100,0%	0,0%	0,0%	0,0%	0,0%	100,0%
37-39	Output	196,1			19,7		215,8
	Interm. Consumption	88,0			9,7		97,7
	Gross Value Added	108,0	0,0	0,0	10,1	0,0	118,1
	% of sector in GVA	91,5%	0,0%	0,0%	8,5%	0,0%	100,0%
E	Output	294,3	0,0	0,0	19,7	0,0	314,0
	Interm. Consumption	156,4	0,0	0,0	9,7	0,0	166,1
	Gross Value Added	137,8	0,0	0,0	10,1	0,0	147,9
	% of sector in GVA	93,2%	0,0%	0,0%	6,8%	0,0%	100,0%

Basis for NA figures**Sources and methods**

The annual economic survey (“Industrial Production Survey”) for Division E36, covers the activities of the Water Boards in the urban regions which are semi-government organizations and the water desalination plants. For Division E37, it covers the activities of Sewerage Boards which are semi-government organizations and a sample of private enterprises providing sewerage activities. For Divisions E38 and E39, the survey was carried out on a sampling basis for the enterprises employing less than 20 persons, while it covered all enterprises engaging 20 persons and over. The sample was based on the 2017 Business Register and was selected on a PPS basis (probability proportional to size). It was stratified by employment size group and by NACE. The unit of enumeration was the “enterprise”.

The output, as obtained from the survey is as follows:

Table 3.11.4: Output, NACE Section E, 2017

	(€ million)
Turnover from Industrial Activities	299,9
+ Turnover from services Activities	8,8
+ Sales of goods for resale	0,4
+ Income from rentals	0,1
+ Income from commissions	0,3
= Total turnover	309,6
+ Other operating income	1,7
- Value of goods purchased for resale	0,3
+ Change in stocks	-0,1
+ Value of capital goods produced for own use	0,8
= Output	311,7
- Intermediate consumption	159,7
= Gross Value Added	152,0

The intermediate consumption of total NACE E is structured as follows:

Table 3.11.5: Intermediate Consumption, NACE Section E, 2017

	(€ million)	(%)	
		Intermediate consumption	Output
Direct production expenses	150,8	94,5%	48,4%
Administrative and other non-industrial expenses	6,9	4,3%	2,2%
Rentals	1,9	1,2%	0,6%
Total intermediate consumption	159,7	100,0%	51,2%

Intermediate consumption is the sum of direct costs, administrative costs and rentals, which is obtained from the annual economic survey. In the Survey, direct production expenses mainly cover raw and packing materials, fuels and lubricants, the cost of stationery and other materials, electricity and heating expenses, transport costs as well as repairs and other maintenance expenses. Under this category the payments for services rendered are also included. Administrative expenses include the cost of telephones, postage, legal and accounting services as well as other service costs, such as technical and consultancy services, advertising and entertainment expenses, bank charges etc.

Exhaustiveness Adjustments to the basis for NA figures

Apart from the conceptual adjustments (see section 3.4) and the Balancing (see chapter 6), the following exhaustiveness adjustments are made:

Adjustment due to wages in kind (N7)

An adjustment is made regarding the use of company cars by employees in their private life. More specifically, the value of fuels used for private use is calculated. This amount is added to wages and salaries and subtracted from the intermediate consumption of firms. For more information, see chapter 7.

A summary of the total adjustments is shown in the table below:

Table 3.11.6: Summary of total adjustments, NACE E, 2017 (€ million)

Type of adjustment	Output	Intermediate consumption	Gross value added
Allocation of FISIM	0,0	7,3	-7,3
Allocation of Insurance Output	0,0	1,5	-1,5
Other Conceptual	2,3	-0,8	3,1
Holding Gains	2,4	-0,7	3,1
Relocation to trade	-0,1	-0,1	0,0
Exhaustiveness	0,0	-1,4	1,4
Wages & salaries in kind (N7)	0,0	-1,4	1,4
Balancing	0,0	-0,1	0,1
Total adjustments in NACE E	2,3	6,4	-4,1

A summary of the Final estimate is presented in the following table:

Table 3.11.7: Summary, NACE Section E, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	311,7	159,7	152,0
Surveys and censuses	311,7	159,7	152,0
Administrative records	0,0	0,0	0,0
Combined data	0,0	0,0	0,0
Extrapolation and models	0,0	0,0	0,0
Adjustments	2,3	6,4	-4,1
Data validation	0,0	0,0	0,0
Allocation of FISIM	0,0	7,3	-7,3
Allocation of Insurance Output	0,0	1,5	-1,5
Other conceptual	2,3	-0,8	3,1
Exhaustiveness	0,0	-1,4	1,4
Balancing	0,0	-0,1	0,1
Final estimate	314,0	166,1	147,9

3.12 Construction (NACE Rev.2 Section F)

Table 3.12.1: Description of NACE divisions, Section F

NACE Rev.2	Activity
41-43	Construction
F	Construction

Main variables in the sector of construction are shown below:

Table 3.12.2: Introductory Table, NACE Section F, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE F	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
41-43	2.977,5	2.056,3	921,2	100,0%	5,2%	4,6%	4,7%
F	2.977,5	2.056,3	921,2	100,0%	5,2%	4,6%	4,7%

The breakdown by NACE divisions and institutional sectors and the relevant shares are shown in the table below:

Table 3.12.3: NACE Section F by institutional sector, 2017

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
41-43	Output	2.557,7		108,2	311,6		2.977,5
	Interm. Consumption	1.838,4		4,1	213,7		2.056,3
	Gross Value Added	719,2	0,0	104,0	97,9	0,0	921,2
	% of sector in GVA	78,1%	0,0%	11,3%	10,6%	0,0%	100,0%
F	Output	2.557,7	0,0	108,2	311,6	0,0	2.977,5
	Interm. Consumption	1.838,4	0,0	4,1	213,7	0,0	2.056,3
	Gross Value Added	719,2	0,0	104,0	97,9	0,0	921,2
	% of sector in GVA	78,1%	0,0%	11,3%	10,6%	0,0%	100,0%

Basis for NA Figures

Surveys and Censuses

Construction sector covers the activities of construction of buildings, civil engineering and specialized construction activities. The data sources are mainly: the annual structural business survey “Construction and Land Development Survey”, other monthly and quarterly surveys in the framework of Short-Term Statistics and administrative records.

The “Construction and Land Development Survey” is held annually and aims at collecting data on the basic economic characteristics of the sector. The survey is conducted with the completion of a questionnaire. This is done by personal interview by staff of the Statistical Service who visits all construction enterprises included in the sample.

The 2017 “Construction and Land Development Survey” was conducted on a sample basis. The sample covered all construction enterprises employing 20 persons and over, 67% of the total enterprises employing 10 to 19 persons and over, and approximately 13% of the total enterprises employing 1 to 9 persons. The sample was based on the 2017 Business Register and it was selected systematically with Probability Proportional to Size (PPS) from a list ordered by enterprise employment size.

Enterprises covered are classified according to their principal construction activity, based on the main type of construction work put in place. Construction includes the general and special trade contractors primarily engaged in contract construction, as well as land and buildings developers.

Valuation of Output (Based on the Construction and Land Development Survey)

Gross output in the construction sector is the value of work put in place either by direct contracts or subcontracts, services rendered to others, net receipts from the sale of goods sold in the same condition as purchased, other receipts and changes in the value of work-in-progress at the end of the inquiry period.

The valuation of the gross output is at prices secured by the enterprise, excluding discounts and commissions but including other taxes on production (D29).

Annual construction output assessed: this figure reflects the value of all construction work undertaken in Cyprus during the calendar year, irrespective of when the work was ordered or paid for; it includes income from work performed by enterprises as subcontractors and work performed

for them by external enterprises or subcontractors as well as income from the development of building projects.

Validation Procedure

Construction activity is characterized by the number of small sized (up to 4 persons) businesses that come into, and go out of, existence with extreme rapidity. Therefore, the survey estimates are cross-checked regularly by the SBS section with relevant data obtained from the alternative source Building Permit and Housing Survey.

The **Building Permit and Housing Survey** is an annual survey, which is carried out on a sample basis, covering the building permits authorized by the municipalities (predominantly urban and suburban areas) and the district administration offices of the Ministry of Interior (rural areas).

It should be noted that by law a building permit is required before the commencement of any construction activity (new construction, repairs, alterations, improvements etc.) in the island. A complete administrative coverage of these permits is achieved by CYSTAT where data is obtained by location, type of building, surface area in square meters, estimated cost of construction works, etc.

The survey aims at collecting data on housing and other construction activity, such as the distribution of construction expenditure by type of project, housing characteristics, dwelling size, available amenities etc.

The frame for sample selection for the 2017 Building Permits and Housing Survey was a list of all building permits authorized in 2017, by the respective issuing authorities. In addition, all permits included in the previous surveys, for which either construction work had not started or had not been completed by December 2016, were also included. This type of “follow-up enquiry” is considered essential, since a time-lag exists from the date of issue of a permit until its final completion. Therefore, all permits that have been selected in a sample of any year’s survey are “followed up” annually and are being “dropped out” from the current year’s sample only when the construction work is completed.

The sampling method employed consists of a combination of stratified and two-stage sampling. First, the building permits are stratified by type of project for each administrative district. Projects whose declared building area was greater than 1.350 m² were fully covered, with the exception of residential projects with declared building area between 1.350 and 1.800 m² whose rate of coverage was 50%. For the remaining projects, a sample was selected proportional to the total number of permits in each stratum. The sample for 2017 amounted to 11%, while among permits for “big” projects with a declared building area greater than 900 m² the coverage reached 71%. The

expenditure on the work put in place for each project is allocated by year in the survey questionnaire and only the year under investigation (i.e. 2017 in this case) is taken into account.

Treatment of subcontracting in construction

The subcontracted construction work is captured in both activities (main company and subcontractor). There are two different cases for the treatment of subcontracting in construction as follows:

- Payments made by the developer (NACE 41.1) to other construction enterprises (mainly NACE 41.2) are recorded as subcontracting expenses. Construction enterprises are recording these payments as turnover from main activity (New project).
- Payments made by the main contractor (NACE 41.2) to others for work done or services rendered are recorded as payments to subcontractors. On the other hand, subcontractors (NACE 43) are recording these payments as turnover from subcontracting.

In addition, annual construction output is increased by the amount of the other turnover of construction companies; these include receipts from the sale of industrial items produced by the enterprise as well as sales of goods purchased for re-sale by the enterprise in the same condition as purchased. Revenue from services such as rentals, commissions, and any other revenue from services as well as the changes in stocks and work in progress are taken into consideration for the valuation of output. Purchases of goods for re-sale in the same condition as purchased are excluded in the valuation of the final construction output.

Reconciliation of subcontracting should be understood in the way that the discrepancy is an indication of the need to review the estimates of construction rather than an indication of the need to make explicit adjustment. If the overall construction is balanced, which is the case for Cyprus, then there is no need to make adjustments due to the reconciliation of subcontracting.

For validation purposes regarding the supply and demand of building materials, the table below shows the ratio of the volume of Intermediate Consumption of “Cement” (CPA 23.5) and “Basic Iron” (CPA 24.1) over the Production Volume of “Buildings Construction” (CPA 41.0). It is observed that this ratio does not change significantly through the years and thus there is no indication that an adjustment for under coverage of construction should be made.

Table 3.12.4: Intermediate Consumption of Cement and Basic Iron compared to Buildings Construction

Year	Ratio of volume of IC CPA 23.5 and CPA 24.1 / Output CPA 41.0
2012	10,4%
2013	10,5%
2014	10,3%
2015	9,6%
2016	9,9%
2017	10,4%
2018	9,6%

Given the annual economic survey data in the construction activities sector, it is considered that the total output includes the revenue from all subcontracting activities and total expenditure on subcontracting.

The expenditure by main contractors on subcontracting construction work is recorded in the Construction Survey questionnaire as part of Production Expenses under the heading "Subcontracting".

The expenditure is confronted with the revenue of subcontractors but the two figures are not comparable. The main reason of the difference is due to the fact that NACE 41.1 enterprises declare all amounts paid to other construction enterprises (NACE 41.2) as subcontracting expenses but the construction enterprises do not consider that working for a Developer is subcontracting but a New Project.

No under-coverage of register based surveys was being recorded after validating construction output. Data for construction sector is confronted in the Supply and Use tables and any under-coverage or under-estimation is corrected during the balancing procedure.

The table below shows the data prior to balancing for Construction at product level for the year 2017.

Table 3.12.5: Construction products - initial estimates prior to balancing, 2017 (€ million)

CONSTRUCTION PRODUCTS INITIAL SUT DATA	2017
SUPPLIES	
Output at basic prices by product	2.838,9
Imports of Goods & Services	7,5
Other Taxes on Products	101,6
Non-deductible VAT	220,4
TOTAL SUPPLY	3.168,4
USES	
Intermediate consumption	1.364,7
Final consumption expenditure	19,1
Gross fixed capital formation	1.728,5
Changes in inventories	-78,5
Exports of Goods & Services	120,7
TOTAL USE	3.154,4
Discrepancy "SUPPLY - USE"	13,9
Discrepancy as % of the "SUPPLY"	0,4%

The discrepancy between supply and use of the construction products prior to SUT balancing for the year 2017 is negligible and making explicit adjustments along the lines seems not to be desirable.

Any repairs and improvements to dwellings from households are validated against expenditure using data from Household Budget Survey. See chapter 3.18 and 5.10.

Construction Abroad

Construction carried out abroad for a period less than one year is recorded as domestic output. Specific instructions are given orally to interviewers who visit the construction enterprises and they are advised to record projects with duration under one year. The oral instructions are given to interviewers during intense training sessions before the beginning of the survey (including examples). Moreover, when the questionnaires are gathered in CYSTAT, statistics officers may contact the enterprise for clarifications or crosscheck the information obtained.

Information about export of services cannot be isolated by specific questions on exports in construction surveys. This amount is recorded in Balance of Payment statistics which consist of surveyors plans prepared in Cyprus and construction services for projects abroad that do not fall under the quasi-corporation rule. Data regarding exports of services in construction is being recorded through specific survey which is carried out by the Central Bank of Cyprus and the frame includes construction enterprises that undertake construction work outside the domestic economy.

The following table summarises the output of the construction activity NACE Section F:

Table 3.12.6: Valuation of Output, Survey & Censuses, NACE F, 2017

	€ million
Main constructive activity	
Annual value of construction work / New projects	1.511,3
Repairs/maintenance	339,0
Subcontracting	402,2
Development of building projects	488,4
Secondary activities	
Sale of industrial goods produced by the enterprise	4,5
Profit from resale of goods	7,2
Provision of Services activities	205,1
Changes in stocks and work in progress	-74,3
Miscellaneous	-44,5
Total output	2.838,9

The results of the annual business survey of the construction industry are used to calculate **intermediate consumption** in the construction sector. The survey contains information on production expenses (construction materials, fuels, other direct production expenses incl. subcontracting expenses, transport costs etc.), administrative expenses (Telephone and postage, accounting and legal services, advertising, and banking charges, other general office expenses), and rentals for buildings and machinery.

Table 3.12.7: Valuation of Intermediate Consumption, Survey & Censuses, NACE F, 2017 (€ million)

Intermediate Consumption	
Production Expenses	1.837,3
Administrative Expenses	169,1
Rentals	18,2
Total intermediate consumption	2.024,5

Gross value added is derived directly as the difference between output and intermediate consumption.

Administrative Records

Basis for National Accounts Figures for Construction Sector also includes the Central Government expenditure for construction purposes. Government budget is the administrative source for the public part of Construction Sector. Data is obtained from the Government Finance Statistics division of CYSTAT.

The Central Government subsector contributes to NACE 41 production. The production of the extra-budgetary Fund Maintenance of Old Renovated Buildings is attributed to NACE 41, however the contribution for 2017 is zero. The procedure followed for the production of the data is the same followed for the rest of the Central Government subsector as described in chapter 3.18.

The Central Government subsector also contributes to NACE 42 production. Part of the production of the Public Works Department of the Ministry of Communications and Works as well as part of all the district administrations production (except for that of Kyrenia, which is entirely under the control of Turkish-occupying forces since 1974) are attributed to NACE 42 as indicated in the table below. The procedure followed for the production of the data is the same followed for the rest of the Central Government subsector as described in chapter 3.21.

Table 3.12.8: Summary, Administrative Records, NACE 42, 2017 (€ million)

P1	Output	41,4
P2	Intermediate Consumption	4,1
B1g	Gross Value added	37,3

Extrapolation and Models

For the case of General Government (NACE 02), the estimates of the consumption of fixed capital obtained from the Perpetual Inventory Model (PIM) are included under extrapolation and models data.

Table 3.12.9: Summary, Extrapolation and Models, NACE 42, 2017 (€ million)

P1	Output	66,7
P2	Intermediate Consumption	0,0
B1g	Gross Value added	66,7

Exhaustiveness Adjustments to the basis for NA figures

Apart from the conceptual adjustments (see section 3.4) and the Balancing (see chapter 6), the following exhaustiveness adjustments are made:

Adjustment due to own account construction (N3)

The value of own account construction by households, i.e. self-built dwelling, is added to output and gross value added. The work in question comprises construction work undertaken personally by the property owner and/or friends and neighbours in the form of unpaid (voluntary work) third-party help. The valuation of output and intermediate consumption is based on information and data obtained from the Construction Survey and Building Permit and Housing survey. For more details, see chapter 7.1.3.

Adjustment due to VAT fraud (N6)

VAT fraud (without complicity) represents the adjustment made to the output in the framework of the Supply and Use balancing procedure. For more details, see chapter 7.1.3.

Adjustment due to wages and salaries in kind (N7)

This exhaustiveness adjustment is performed in order to subtract from the intermediate consumption the value of fuels consumed for the private use of company cars. The calculation method for this income in kind is described in detail in chapter 7.1.3.

A summary outline of the adjustments is presented in the following table:

Table 3.12.10: Summary of total adjustments, NACE F, 2017 (€ million)

Type of adjustment	Output	Intermediate consumption	Gross value added
Allocation of FISIM	0,0	66,3	-66,3
Allocation of Insurance Output	0,0	9,9	-9,9
Other Conceptual	-11,5	-3,7	-7,8
R&D	0,0	0,0	0,0
Holding Gains	-4,2	0,9	-5,1
Relocation to trade	-7,2	-4,6	-2,7
Exhaustiveness	41,8	0,3	41,6
Own Account Construction (N3)	14,2	4,1	10,1
Vat Fraud (N6)	27,7	0,0	27,7
Wages and Salaries in kind (N7)	0,0	-3,9	3,9
Balancing	0,0	-45,2	45,2
Total adjustments in Construction	30,4	27,6	2,8

An overall summary outline with all the adjustments made is presented in the following table:

Table 3.12.11: Summary, NACE Section F, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	2.947,1	2.028,7	918,4
Surveys and censuses	2.838,9	2.024,5	814,4
Administrative records	41,4	4,1	37,3
Combined data	0,0	0,0	0,0
Extrapolation and models	66,7	0,0	66,7
Adjustments	30,4	27,6	2,8
Data validation	0,0	0,0	0,0
Allocation of FISIM	0,0	66,3	-66,3
Allocation of Insurance Output	0,0	9,9	-9,9
Other conceptual	-11,5	-3,7	-7,8
Exhaustiveness	41,8	0,3	41,6
Balancing	0,0	-45,2	45,2
Final estimate	2.977,5	2.056,3	921,2

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

Table 3.13.1: Description of NACE divisions, Section G

NACE Rev.2	Activity
45	Wholesale and retail trade and repair of motor vehicles and motorcycles
46	Wholesale trade, except of motor vehicles and motorcycles
47	Retail trade, except of motor vehicles and motorcycles
G	Wholesale and retail trade; repair of motor vehicles and motorcycles

Main variables in the section of Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycle are shown below:

Table 3.13.2: Introductory Table, NACE Section G, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE G	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
45	377,3	201,6	175,7	8,8%	1,0%	0,9%	0,9%
46	1.274,5	449,6	824,9	41,5%	4,7%	4,1%	4,2%
47	1.624,9	635,5	989,3	49,7%	5,6%	4,9%	5,0%
G	3.276,7	1.286,7	1.989,9	100,0%	11,3%	9,8%	10,1%

The breakdown by NACE divisions and institutional sectors and the relevant shares are shown in the table below:

Table 3.13.3: NACE Section G by institutional sector, 2017

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
45	Output	274,4			102,9		377,3
	Interm.	158,3			43,4		201,6
	Gross Value Added	116,1	0,0	0,0	59,6	0,0	175,7
	% of sector in GVA	66,1%	0,0%	0,0%	33,9%	0,0%	100,0%
46	Output	1.176,4			98,1		1.274,5
	Interm.	424,5			25,1		449,6
	Gross Value Added	751,9	0,0	0,0	73,0	0,0	824,9
	% of sector in GVA	91,2%	0,0%	0,0%	8,8%	0,0%	100,0%
47	Output	1.480,6			144,3		1.624,9
	Interm.	599,6			35,9		635,5
	Gross Value Added	881,0	0,0	0,0	108,4	0,0	989,3
	% of sector in GVA	89,0%	0,0%	0,0%	11,0%	0,0%	100,0%
G	Output	2.931,4	0,0	0,0	345,3	0,0	3.276,7
	Interm.	1.182,4	0,0	0,0	104,3	0,0	1.286,7
	Gross Value Added	1.749,0	0,0	0,0	240,9	0,0	1.989,9
	% of sector in GVA	87,9%	0,0%	0,0%	12,1%	0,0%	100,0%

Basis for NA Figures**Surveys and Censuses**

The main activity of wholesale and retail trade and repair services is the redistribution of goods. The data sources for the activity of Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles comprise of an annual survey, in the framework of Structural Business Surveys, a monthly and a quarterly sample survey in the framework of the Short-Term Statistics surveys.

The annual economic survey collects data on the structure of the trade enterprises, the commercial transactions and other financial aspects for the various kinds of activities classified under the Trade section. Monthly and quarterly surveys are also conducted with the aim of collecting data on sales and compiling turnover indices. Currently, there is a monthly Turnover Index for NACE activity 47 and a Quarterly Turnover Index for NACE activities 45 and 46.

The annual survey's results are cross-checked with data that is collected from various administrative records, e.g. foreign trade data provided by the Customs Department and statistically processed and prepared by the External Trade sector of CYPSTAT.

The 2017 "Wholesale and Retail Trade Survey", which was conducted through personal interviews, covered about 13,35% of the total framework in NACE section G (at a five-digit NACE level). The

survey covered all enterprises employing 20 or more persons and a sample of the smaller firms. The sample was based on the 2017 Business Register and is selected on a PPS basis (probability proportional to size). It is stratified by employment size group and by NACE. The unit of enumeration was the “enterprise”.

Valuation of Output

Gross output of the Trade section is defined as the Turnover (value of receipts from the sale of goods purchased for resale, sales of goods of own production and receipts from commissions and other services rendered (excl. VAT), less the cost of all goods purchased for resale (excl. the refundable VAT), plus the changes in stocks of goods purchased for resale, rentals received and other income. This is also considered as a measure of gross margin on goods handled (if receipts from services are excluded). The value of sales of goods is the amount the customer is charged after the deduction of any discounts.

Table 3.13.4: Valuation of Output, Surveys & Censuses, NACE G, 2017 (€ million)

NACE Rev. 2	Total Turnover (1)	Purchases of goods for resale (2)	Changes in stocks of goods for resale (3)	Rentals received and other income (4)	OUTPUT (5)=(1-2+3+4)
45	911,6	560,2	18,8	4,2	374,5
46	5.629,6	4.452,0	43,6	25,2	1.246,5
47	5.686,1	4.323,1	41,1	38,1	1.442,2
G	12.227,3	9.335,2	103,6	67,5	3.063,2

Intermediate consumption

The results of the annual business survey of the Wholesale and Retail Trade activities are used to calculate intermediate consumption in the section. The survey contains information on production expenses (materials, fuels, electricity, repairs, services by others, etc.), administrative expenses (Telephone and postage, accounting and legal services, advertising, and banking charges, other general office expenses), and rentals paid for buildings and machinery.

Gross value added is derived directly as the difference between output and intermediate consumption. The corresponding values are shown in the table below:

Table 3.13.5: Summary, Surveys & Censuses, NACE G, 2017 (€ million)

NACE Rev. 2	Output	Intermediate Consumption	Gross Value Added
45	374,5	191,0	183,5
46	1.246,5	415,4	831,0
47	1.442,2	513,8	928,4
G	3.063,2	1.120,2	1.942,9

As stated above, in data sources turnover and the purchase value of sold goods for resale are shown separately and this allows a direct estimation of trade margins as output of wholesale and retail trade. Since the value of output does not include any taxes on products, subsequently the value obtained is at basic prices.

Specific calculations are made for the exclusion of holding gains and losses from trade margins, in order to be in line with the national accounts concepts. In the production approach this is ensured through the conceptual adjustment due to holding gains. For more details see chapter 5.11.

Given that the results of the annual business survey of the Wholesale and Retail Trade activities are available in detail, along with other monthly surveys conducted with the aim of collecting data on sales in the retail activities, there is no need for ad-hoc surveys on trade margins.

Since the unit of enumeration for the survey is the “enterprise”, the relocation of a specific amount to the output is necessary for Section G, due to trade activity of enterprises from another section. Thus, there are no records of double counting when other branches have trade as a secondary activity.

Independent estimates for the Wholesale and Retail Trade; repair of motor vehicles and motorcycle section are confronted in the Supply and Use tables and any under-coverage or under-estimation is corrected during the balancing procedure. Data in the supply side are mainly based on the results of the annual business survey of the Wholesale and Retail Trade activities and on the other hand Household Budget Survey and other relevant surveys are the main sources for the use side. Thus the estimates are validated against each other during balancing.

Exhaustiveness Adjustments to the basis for NA figures

Apart from the conceptual adjustments (see section 3.4) and the Balancing (see chapter 6), the following exhaustiveness adjustments are made:

Adjustment due to Illegal activities - Narcotics (N2)

Specific sources and methods are used to ensure that estimates on the illegal activities of drugs in the production approach are incorporated properly in the National Accounts. Detailed methodological information regarding Illegal Activities is presented in chapter 7.

Adjustment due to VAT fraud (N6)

VAT fraud (without complicity) represents the adjustment made to the output in the framework of the Supply and Use balancing procedure. For more details, see chapter 7.1.3.

Adjustment due to wages and salaries in kind (N7)

This exhaustiveness adjustment is performed in order to subtract from the intermediate consumption the value of fuels consumed for the private use of company cars. The calculation method for this income in kind is described in detail in chapter 7.1.3.

A summary outline of the adjustments to the Basis for NA Figures is presented in the following table:

Table 3.13.6: Summary of total adjustments, NACE G, 2017 (€ million)

Type of adjustment	Output	Intermediate consumption	Gross value added
Allocation of FISIM	0,0	71,5	-71,5
Allocation of Insurance Output	0,0	29,4	-29,4
Other Conceptual	169,5	78,7	90,8
R&D	0,1	0,0	0,1
Holding Gains	32,2	-8,5	40,7
Relocation to trade	137,1	87,2	49,9
Exhaustiveness	44,0	-12,0	56,0
Narcotics (N2)	31,9	0,0	31,9
Vat Fraud (N6)	12,1	0,0	12,1
Wages and Salaries in kind (N7)	0,0	-12,0	12,0
Balancing	0,0	-1,1	1,1
Total adjustments in NACE G	213,5	166,5	47,0

An overall summary outline with all the adjustments made is presented in the following table:

Table 3.13.7: Summary, NACE Section G, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	3.063,2	1.120,2	1.942,9
Surveys and censuses	3.063,2	1.120,2	1.942,9
Administrative records	0,0	0,0	0,0
Combined data	0,0	0,0	0,0
Extrapolation and models	0,0	0,0	0,0
Adjustments	213,5	166,5	47,0
Data validation	0,0	0,0	0,0
Allocation of FISIM	0,0	71,5	-71,5
Allocation of Insurance Output	0,0	29,4	-29,4
Other conceptual	169,5	78,7	90,8
Exhaustiveness	44,0	-12,0	56,0
Balancing	0,0	-1,1	1,1
Final estimate	3.276,7	1.286,8	1.989,9

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

Table 3.14.1: Description of NACE divisions, Section H

NACE Rev.2	Activity
49	Land transport and transport via pipelines
50	Water transport
51	Air transport
52	Warehousing and support activities for transportation
53	Postal and courier activities
H	Transportation and Storage

The values for output, intermediate consumption and value added by NACE divisions for Transportation and Storage are shown in the table below:

Table 3.14.2: Introductory Table, NACE Section H, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE H	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
49	361,9	180,8	181,2	14,6%	1,0%	0,9%	0,9%
50	1.742,3	1.252,7	489,6	39,5%	2,8%	2,4%	2,5%
51	69,5	97,2	-27,6	-2,2%	-0,2%	-0,1%	-0,1%
52	2.450,8	1.891,0	559,8	45,1%	3,2%	2,8%	2,8%
53	69,3	31,5	37,8	3,0%	0,2%	0,2%	0,2%
H	4.693,8	3.453,1	1.240,6	100,0%	7,0%	6,1%	6,3%

As it can be observed from the above table, it is evident that the dominant activities of NACE H are the Water Transport (NACE 50) and the Warehousing and Support activities for Transportation (NACE 52).

The breakdown by NACE divisions and institutional sectors and the relevant shares are shown in the table below:

Table 3.14.3: NACE Section H by institutional sector, 2017

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
49	Output	292,5			69,4		361,9
	Interm. Consumption	150,3			30,4		180,8
	Gross Value Added	142,2	0,0	0,0	39,0	0,0	181,2
	% of sector in GVA	78,5%	0,0%	0,0%	21,5%	0,0%	100,0%
50	Output	1.741,5			0,8		1.742,3
	Interm. Consumption	1.252,3			0,4		1.252,7
	Gross Value Added	489,2	0,0	0,0	0,4	0,0	489,6
	% of sector in GVA	99,9%	0,0%	0,0%	0,1%	0,0%	100,0%
51	Output	69,5					69,5
	Interm. Consumption	97,2					97,2
	Gross Value Added	-27,6	0,0	0,0	0,0	0,0	-27,7
	% of sector in GVA	100,0%	0,0%	0,0%	0,0%	0,0%	100,0%
52	Output	2.312,4		98,7	39,6		2.450,8
	Interm. Consumption	1.858,5		11,4	21,1		1.891,0
	Gross Value Added	453,9	0,0	87,3	18,5	0,0	559,8
	% of sector in GVA	81,1%	0,0%	15,6%	3,3%	0,0%	100,0%
53	Output	34,6		26,7	8,0		69,3
	Interm. Consumption	18,3		7,3	5,8		31,5
	Gross Value Added	16,3	0,0	19,3	2,2	0,0	37,8
	% of sector in GVA	43,1%	0,0%	51,2%	5,7%	0,0%	100,0%
H	Output	4.450,5	0,0	125,4	117,8	0,0	4.693,8
	Interm. Consumption	3.376,6	0,0	18,7	57,8	0,0	3.453,1
	Gross Value Added	1.074,0	0,0	106,7	60,0	0,0	1.240,6
	% of sector in GVA	86,6%	0,0%	8,6%	4,8%	0,0%	100,0%

Basis for NA figures**Surveys & Censuses**

The main data source is the annual economic survey (“Services and Transport Survey”) which produces statistical data related to employment, output, value added, expenses and investments by economic activity based on the Statistical Classification of Economic Activities (NACE Rev.2). The survey of 2017 was conducted through personal interviews. It was carried out on a sampling basis for the enterprises employing less than 20 persons, while it covered all enterprises engaging 20 persons and over. The sample was based on the 2017 Business Register and was selected on a PPS basis (probability proportional to size). It was stratified by employment size group and by NACE. The unit of enumeration was the “enterprise”.

The composition of output for 2017 as obtained from the economic survey is shown in the table below.

Table 3.14.4: Summary, Surveys, NACE Section H, 2017

Income from services produced	2.806,4
+ Sales of goods for resale	3,6
+ Income from rentals	3,3
+ Income from commission	2,5
= Total turnover	2.815,8
+ Other operating income	4,4
+ Change in stocks	-0,6
- Value of goods purchased for resale	2,6
= Output	2.817,1
- Intermediate consumption	2.130,0
= Gross Value Added	687,0

Intermediate consumption is the sum of direct costs, administrative costs and rentals, which is obtained from the annual economic survey. In the Survey, direct production expenses mainly cover fuels and lubricants, the cost of stationery and other materials, electricity and heating expenses, transport costs as well as repairs and other maintenance expenses. Under this category the payments for services rendered are also included. Administrative expenses include the cost of telephones, postage, legal and accounting services as well as other service costs, such as technical and consultancy services, advertising and entertainment expenses, bank charges etc.

The total values for intermediate consumption and the corresponding value added as obtained from the economic surveys are shown in the table below in 2-digit NACE:

Table 3.14.5: Summary, Surveys & Censuses, NACE H, 2017 (€ million)

NACE Rev. 2	Output	Intermediate consumption	Gross Value added
49	313,9	170,5	143,4
50	37,7	21,3	16,4
51	69,5	94,0	-24,5
52	2.352,4	1.819,9	532,6
53	43,5	24,4	19,1
H	2.817,1	2.130,0	687,0

Administrative records

The Central Government subsector contributes to the production of NACEs 52 and 53. Data is obtained from the Government Finance Statistics division of CYSTAT.

More specifically, the production of the Civil Aviation Department of the Ministry of Communications and Works as well as the production of the Cyprus Petroleum Storage Company (semi-government organisation) are attributed to NACE 52 as indicated in the table below. The procedure followed for the production of the data is the same followed for the rest of the Central Government subsector as described in section 3.21.

Table 3.14.6: Summary, Administrative records, NACE 52, 2017

		€ million
P1	Output	98,0
P2	Intermediate Consumption	11,4
B1g	Gross Value added	86,6

The production of the Postal Service Department of the Ministry of Communications and Works is attributed to NACE 53 as indicated in the table below. The procedure followed for the production of the data is the same followed for the rest of the Central Government subsector as described in section 3.21.

Table 3.14.7: Summary, Administrative records, NACE 53, 2017

		€ million
P1	Output	26,5
P2	Intermediate Consumption	7,3
B1g	Gross Value added	19,1

Extrapolations and Models

For the activity of ship-owning, data is produced using benchmark extrapolation method. For more details, see section 3.5.

Table 3.14.8: Summary, Extrapolation and Models, NACE 50, 2017

		€ million
P1	Output	1.704,5
P2	Intermediate Consumption	1.032,5
B1g	Gross Value added	672,0

The stock of economic owners from 2015 onwards is estimated using a direct source (IHS Fairplay database) with the registration and -de-registration of ships (Foreign Trade Statistics department).

The Output is estimated (model) using the stock of the economic owners multiplied by an average fee which is extrapolated from the benchmark year using the Producer Price Index for water Transport. On the other hand, Intermediate Consumption is estimated as a ratio of Output assuming that this ratio remains the same over the years. As mentioned in section 3.5, Cystat in co-operation with the Central Bank started a new type of survey where data is collected from the big audit companies.

The following figures present: a) the stock of ships by type for the year 2017 (economic owners) and b) the extrapolation estimates of Output from the benchmark year 2012 to 2017.

Ship Owning Data 2017- Economic Owners (from Foreign Trade Statistics)

TYPE OF SHIP	NUMBER OF SHIPS	GROSS TONNAGE
Bulk Carrier	236	9.475.605
Container	103	2.382.251
Chemical / Oil Tanker	123	3.490.797
TUG	116	31.138
General Cargo / Multipurpose	137	954.954
Supply Ship / Support Vessel	64	157.819
Other	184	2.095.910
TOTAL	963	18.588.474

Output-IC estimates for the years 2012-2017

	1	2	3	4	5
Year	Population of economic owners - Gross tonnage	PPI water transport(2015=100)	Average Fees per tonn (extrapolated using PPI)	Output million euro 4 =1*3	IC excluding Fisim – million euro
2012-benchmark	20.384.948	102,7	92,760	1.890,9	1.145,4
2013	20.432.349	103,3	93,302	1.906,4	1.154,8
2014	19.639.396	97,7	88,244	1.733,1	1.049,8
2015	19.325.841	100,0	90,321	1.745,5	1.057,4
2016	18.504.921	98,1	88,605	1.639,6	993,2
2017	18.588.474	101,5	91,694	1.704,5	1.032,5

For the case of General Government (NACE 52, NACE 53), the estimates of the consumption of fixed capital obtained from the Perpetual Inventory Model (PIM) are also included under extrapolation and models data.

Table 3.14.9: Summary, Extrapolation and Models, NACE 52, 2017

		€ million
P1	Output	0,7
P2	Intermediate Consumption	0,0
B1g	Gross Value added	0,7

Table 3.14.10: Summary, Extrapolation and Models, NACE 53, 2017

		€ million
P1	Output	0,2
P2	Intermediate Consumption	0,0
B1g	Gross Value added	0,2

Exhaustiveness Adjustments to the basis for NA figures

Apart from the conceptual adjustments (see section 3.4) and the Balancing (see chapter 6), the following exhaustiveness adjustments are made:

Adjustment due to VAT fraud (N6)

VAT fraud (without complicity) represents the adjustment made to the output in the framework of the Supply and Use balancing procedure. For more details, see chapter 7.1.3.

Adjustment due to tipping (N7)

From an ad-hoc survey, it was made evident that only for the activities under land transport and more specifically for the activities of NACE 49.32.1 (urban taxi transport) an adjustment for tipping was relevant. Only urban taxi drivers receive tips, since in the case of rural and intercity taxis the conditions are such that a tip is not customarily expected and, therefore, the level of tips should be considered as insignificant. Since these cash tips do not appear in the employer's data and, consequently, in the output, exhaustiveness adjustments are made by the national accounts. The ad hoc evidence indicates that tipping for urban taxis transport was €2,9 million in 2017. For more details, see chapter 7.

Adjustment due to wages and salaries in kind (N7)

This exhaustiveness adjustment is performed in order to subtract from the intermediate consumption the value of fuels consumed for the private use of company cars. The calculation method for this income in kind is described in detail in chapter 7.1.3.

A summary of the total adjustments is shown in the table below:

Table 3.14.11: Summary of total adjustments, NACE H, 2017 (€ million)

Type of adjustment	Output	Intermediate consumption	Gross value added
Allocation of FISIM	0,0	262,8	-262,8
Allocation of Insurance Output	0,0	14,3	-14,3
Other Conceptual	42,0	1,8	40,2
Holding Gains	0,0	2,5	-2,5
Net taxes on products	43,0	0,0	43,0
R&D	0,0	0,0	0,0
Relocation to trade	-1,0	-0,7	-0,4
Exhaustiveness	4,7	-4,0	8,7
VAT fraud (N6)	1,9	0,0	1,9
Tipping (N7)	2,9	0,0	2,9
Wages & salaries in kind (N7)	0,0	-4,0	4,0
Balancing	0,0	-3,1	3,1
Total adjustments in NACE H	46,8	271,9	-225,1

A summary of the Final estimate is presented in the following table:

Table 3.14.12: Summary, NACE Section H, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	4.647,0	3.181,3	1.465,7
Surveys and censuses	2.817,1	2.130,0	687,0
Administrative records	124,5	18,7	105,8
Combined data	0,0	0,0	0,0
Extrapolation and models	1.705,5	1.032,5	672,9
Adjustments	46,8	271,9	-225,1
Data validation	0,0	0,0	0,0
Allocation of FISIM	0,0	262,8	-262,8
Allocation of Insurance Output	0,0	14,3	-14,3
Other conceptual	42,0	1,8	40,2
Exhaustiveness	4,7	-4,0	8,7
Balancing	0,0	-3,1	3,1
Final estimate	4.693,8	3.453,1	1.240,6

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

Table 3.15.1: Description of NACE divisions, Section I

NACE Rev.2	Activity
55	Accommodation
56	Food and beverage service activities
I	Accommodation and food service activities

The values for output, intermediate consumption and value added by NACE divisions for Accommodation and Food Service activities are shown in the table below:

Table 3.15.2: Introductory Table, NACE Section I, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE I	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
55	1.254,4	524,8	729,6	57,5%	4,1%	3,6%	3,7%
56	1.222,4	682,0	540,3	42,5%	3,1%	2,7%	2,7%
I	2.476,8	1.206,8	1.269,9	100,0%	7,2%	6,3%	6,5%

As it can be observed from the above table, the gross value added of both NACE 55 -Accommodation and NACE 56 - Food and Beverage service activities are of equivalent importance.

The breakdown by NACE divisions and institutional sectors and the relevant shares are shown in the table below:

Table 3.15.3: NACE Section I by institutional sector, 2017

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
55	Output	1.155,6			98,8		1.254,4
	Interm. Consumption	486,5			38,3		524,8
	Gross Value Added	669,1	0,0	0,0	60,5	0,0	729,6
	% of sector in GVA	91,7%	0,0%	0,0%	8,3%	0,0%	100,0%
56	Output	1.019,6			202,8		1.222,4
	Interm. Consumption	595,9			86,1		682,0
	Gross Value Added	423,6	0,0	0,0	116,7	0,0	540,3
	% of sector in GVA	78,4%	0,0%	0,0%	21,6%	0,0%	100,0%
I	Output	2.175,2	0,0	0,0	301,6	0,0	2.476,8
	Interm. Consumption	1.082,5	0,0	0,0	124,4	0,0	1.206,8
	Gross Value Added	1.092,7	0,0	0,0	177,2	0,0	1.269,9
	% of sector in GVA	86,0%	0,0%	0,0%	14,0%	0,0%	100,0%

Basis for NA figures**Surveys & Censuses**

The main data source is the annual economic survey (“Services and Transport Survey”), which produces statistical data related to employment, output, value added, expenses and investments by economic activity based on the Statistical Classification of Economic Activities (NACE Rev.2). The survey of 2017 was conducted through personal interviews. It was carried out on a sampling basis for the enterprises employing less than 20 persons, while it covered all enterprises engaging 20 persons and over. The sample was based on the 2017 Business Register and was selected on a PPS basis (probability proportional to size). It was stratified by employment size group and by NACE. The unit of enumeration was the “enterprise”.

Gross output of restaurants and hotels is defined as the value of services produced, net receipts from the resale of goods and other receipts. This output includes the value of food, beverages, etc. consumed.

The composition of output for 2017 as obtained from the economic survey is shown in the table below:

Table 3.15.4: Summary, Surveys & Censuses, NACE Section I, 2017

	€ million
Income from services rendered	2.306,2
+ Sales of goods for resale	28,0
+ Income from rentals	8,9
+ Income from commissions	0,3
= Total turnover	2.343,4
+ Other operating income	6,2
- Value of goods purchased for resale	18,6
+ Change in stock	0,1
= Output	2.331,0
- Intermediate consumption	1.135,4
= Gross Value Added	1.195,6

Intermediate consumption is the sum of direct costs, administrative costs and rentals, which is obtained from the annual economic survey. In the Survey, direct production expenses mainly cover fuels and lubricants, purchases of food and beverage, electricity and heating expenses, transport costs as well as repairs and other maintenance expenses. Under this category the payments for services rendered are also included. Administrative expenses include the cost of telephones, postage, legal and accounting services as well as other service costs, such as technical and consultancy services, advertising and entertainment expenses, bank charges etc.

It should be noted that imports and exports of hotel and restaurant services are measured in the Balance of Payments and are part of the item "Travel".

Exhaustiveness Adjustments to the basis for NA figures

Apart from the conceptual adjustments (see section 3.4) and the Balancing (see chapter 6), the following exhaustiveness adjustments are made:

Adjustment due to Airbnb (N1)

In January 2020 and following the findings of SUT balancing for the year 2016, it was proved that there is a significant activity via Airbnb and other platforms in Cyprus. CYSTAT, used data/info from online database www.airdna.co in order to estimate the revenue from rentals via online platforms (i.e. Airbnb). For more details, see chapter 7.1.3.

Adjustment due to VAT fraud (N6)

VAT fraud (without complicity) represents the adjustment made to the output in the framework of the Supply and Use balancing procedure. For more details, see chapter 7.1.3.

Adjustment due to mis-reporting by the producer (N6)

After the preliminary results of the Hotels and Restaurants survey are obtained, they are confronted with those from the Tourist Expenditure Survey. Additional sources for validation purposes in this context are the number of tourists, the hotel occupancy survey, the Household Budget Survey, etc. A validation of the data is also made during the balancing procedure within the SUT framework. Several ad-hoc surveys were also conducted by CYPSTAT in the previous years, collecting relevant information on the turnover and mis-reporting of the accommodation and food service activities.

This information, together with experience of the colleagues involved in the analysis of data obtained from the annual economic surveys, resulted to an adjustment made for mis-reporting. Since data for intermediate consumption is regarded as accurate, the relevant adjustment impacts the output and subsequently the gross value added. For 2017 this exhaustiveness adjustment is estimated at €32,9 million. For more details see chapter 7.

Adjustment due to tipping (N7)

The approach used to estimate tips NACE I, is the rounding-up of average consumer prices charged. CPI data referring to year 2017 was extracted for representative products/services offered under this activity. Based on ad-hoc evidence, the total value charged for the most commonly used package of these products/services was estimated and the residual value to the most appropriate rounded-up value was taken to be the level of tip. The figures relating to the tip as a percentage of the price charged were applied to the value of Output as it was obtained from the relevant annual economic survey. The value for 2017 is estimated at €42,7 million. For more details, see chapter 7.

Adjustment due to wages and salaries in kind (N7)

This exhaustiveness adjustment is performed in order to subtract from the intermediate consumption the value of fuels consumed for the private use of company cars. The calculation method for this income in kind is described in detail in chapter 7.1.3.

A summary of the total adjustments is shown in the table below:

Table 3.15.5: Summary of conceptual and exhaustiveness adjustments, NACE I, 2017 (€ million)

Type of adjustment	Output	Intermediate consumption	Gross value added
Allocation of FISIM	0,0	54,4	-54,4
Allocation of Insurance Output	0,0	9,5	-9,5
Other Conceptual	-18,8	-4,6	-14,2
Holding Gains	0,0	-0,1	0,1
Net taxes on products	-9,4	0,0	-9,4
Relocation to trade	-9,4	-4,5	-4,9
Exhaustiveness	164,6	10,8	153,8
Airbnb (N1)	48,7	12,2	36,5
VAT fraud (N6)	40,2	0,0	40,2
Mis-reporting by the producer (N6)	32,9	0,0	32,9
Tipping (N7)	42,7	0,0	42,7
Wages & salaries in kind (N7)	0,0	-1,4	1,4
Balancing	0,0	1,3	-1,3
Total adjustments in NACE I	145,8	71,5	74,3

A summary of the Final estimate is presented in the following table:

Table 3.15.6: Summary, NACE Section I, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	2.331,0	1.135,4	1.195,6
Surveys and censuses	2.331,0	1.135,4	1.195,6
Administrative records	0,0	0,0	0,0
Combined data	0,0	0,0	0,0
Extrapolation and models	0,0	0,0	0,0
Adjustments	145,8	71,5	74,3
Data validation	0,0	0,0	0,0
Allocation of FISIM	0,0	54,4	-54,4
Allocation of Insurance Output	0,0	9,5	-9,5
Other conceptual	-18,8	-4,6	-14,2
Exhaustiveness	164,6	10,8	153,8
Balancing	0,0	1,3	-1,3
Final estimate	2.476,8	1.206,8	1.269,9

3.16 Information and communication (NACE Rev.2 Section J)

Table 3.16.1: Description of NACE divisions, Section J

NACE Rev.2	Activity
58	Publishing activities
59-60	Motion picture, video and television programme, sound recording and music publishing activities; programming and broadcasting activities
61	Telecommunications
62-63	Computer programming, consultancy and related activities; information service activities
J	Information and Communication

The values for output, intermediate consumption and value added by NACE divisions for Information and Communication are shown in the table below:

Table 3.16.2: Introductory Table, NACE Section J, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE A	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
58	824,6	553,6	271,0	23,6%	1,5%	1,3%	1,4%
59-60	130,0	60,4	69,6	6,1%	0,4%	0,3%	0,3%
61	676,3	329,5	346,8	30,2%	2,0%	1,7%	1,8%
62-63	1.653,7	1.191,9	461,8	40,2%	2,6%	2,3%	2,3%
J	3.284,6	2.135,5	1.149,1	100,0%	6,5%	5,7%	5,8%

From this table it is evident that the dominant activity of NACE J is the “Computer programming, consultancy and related activities; information service activities” (NACE 62-63) with the share of the specific division being 40,2% of the total GVA of NACE J.

The breakdown by NACE divisions and institutional sectors and the relevant shares are shown in the table below:

Table 3.16.3: NACE Section J by institutional sector, 2017

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
58	Output	822,9			1,7		824,6
	Interm. Consumption	552,4			1,1		553,6
	Gross Value Added	270,5	0,0	0,0	0,5	0,0	271,0
	% of sector in GVA	99,8%	0,0%	0,0%	0,2%	0,0%	100,0%
59-60	Output	99,9		30,1	0,0		130,0
	Interm. Consumption	52,7		7,7	0,0		60,4
	Gross Value Added	47,3	0,0	22,3	0,0	0,0	69,6
	% of sector in GVA	67,9%	0,0%	32,1%	0,0%	0,0%	100,0%
61	Output	676,3			0,0		676,3
	Interm. Consumption	329,5			0,0		329,5
	Gross Value Added	346,8	0,0	0,0	0,0	0,0	346,8
	% of sector in GVA	100,0%	0,0%	0,0%	0,0%	0,0%	100,0%
62-63	Output	1.651,4		2,3			1.653,7
	Interm. Consumption	1.191,2		0,7			1.191,9
	Gross Value Added	460,1	0,0	1,6	0,0	0,0	461,8
	% of sector in GVA	99,6%	0,0%	0,4%	0,0%	0,0%	100,0%
J	Output	3.250,5	0,0	32,4	1,7	0,0	3.284,6
	Interm. Consumption	2.125,8	0,0	8,5	1,1	0,0	2.135,5
	Gross Value Added	1.124,7	0,0	23,9	0,5	0,0	1.149,1
	% of sector in GVA	97,9%	0,0%	2,1%	0,0%	0,0%	100,0%

Basis for NA figures**Surveys & Censuses**

The main data source is the annual economic survey (“Services and Transport Survey”), which produces statistical data related to employment, output, value added, expenses and investments by economic activity based on the Statistical Classification of Economic Activities (NACE Rev.2). The survey of 2017 was conducted through personal interviews. It was carried out on a sampling basis for the enterprises employing less than 20 persons, while it covered all enterprises engaging 20 persons and over. The sample was based on the 2017 Business Register and was selected on a PPS basis (probability proportional to size). It was stratified by employment size group and by NACE. The unit of enumeration was the “enterprise”.

Gross output of information and communication is defined as the value of services produced, net receipts from the resale of goods and other receipts.

The composition of output for 2017 as obtained from the economic survey is shown in the table below:

Table 3.16.4: Summary, Surveys & Censuses, NACE Section J, 2017

	€ million
Income from services produced	3.185,1
+ Sales of goods for resale	66,3
+ Income from rentals	1,1
+ Income from commissions	0,8
= Total turnover	3.253,2
+ Other operating income	3,9
- Value of goods purchased for resale	64,0
+ Change in stock of goods for resale	0,9
= Output	3.194,1
- Intermediate consumption	2.076,8
= Gross Value Added	1.117,2

Intermediate consumption is the sum of direct costs, administrative costs and rentals, which is obtained from the annual economic survey. In the Survey, direct production expenses mainly cover, the cost of stationery and other materials, electricity and heating expenses, transport costs as well as repairs and other maintenance expenses. Under this category the payments for services rendered are also included. Administrative expenses include the cost of telephones, postage, legal and accounting services as well as other service costs, such as technical and consultancy services, advertising and entertainment expenses, bank charges etc.

It should be noted that intermediate consumption of NACE J as well as all other NACEs include the expenses as indicated in the recommendation on measurement of GFCF in Software - GNIG/026A (i.e. subcontracting of software services, software purchased for embedding in or bundling with computers, equipment or other software, maintenance and repair of software, etc.)

Administrative records

The Central Government subsector contributes to NACE 60 and NACE 63 production. Data is obtained from the Government Finance Statistics division of CYSTAT.

More specifically, the production of the Cyprus Broadcasting Corporation (semi-government organisation) is attributed to NACE 60 as indicated in the table below. The procedure followed for the production of the data is the same followed for the rest of the Central Government subsector as described in section 3.21.

Table 3.16.5: Summary, Administrative records, NACE 60, 2017

		€ million
P1	Output	29,6
P2	Intermediate Consumption	7,7
B1g	Gross Value added	21,8

The production of the Cyprus News Agency (semi-government organisation) is attributed to NACE 63 as indicated in the table below. The procedure followed for the production of the data is the same followed for the rest of the Central Government subsector as described in section 3.21.

Table 3.16.6: Summary, Administrative records, NACE 63, 2017

		€ million
P1	Output	2,3
P2	Intermediate Consumption	0,7
B1g	Gross Value added	1,6

The economic survey is the most important source for the estimation of the output of NACE J and no use of the information provided under the Mini One-Stop-Shop is used. The output of the relevant services (telecommunications, broadcasting etc.) is already included in the data obtained from the economic survey.

Extrapolations and Models

For the case of General Government (NACE 60, NACE 63), the estimates of the consumption of fixed capital obtained from the Perpetual Inventory Model (PIM) are also included under extrapolation and models data.

Table 3.16.7: Summary, Extrapolation and Models, NACE 60, 2017

		€ million
P1	Output	0,5
P2	Intermediate Consumption	0,0
B1g	Gross Value added	0,5

Table 3.16.8: Summary, Extrapolation and Models, NACE 63, 2017

		€ million
P1	Output	0,1
P2	Intermediate Consumption	0,0
B1g	Gross Value added	0,1

Exhaustiveness Adjustments to the basis for NA figures

Apart from the conceptual adjustments (see section 3.4) and the Balancing (see chapter 6), the following exhaustiveness adjustments are made:

Adjustment due to literary or artistic originals

An adjustment is made to the output of NACE 58 (publishing activities) in order to include an estimate for the value of royalties for literary originals and more specifically royalties paid to the writers of books. For 2017 this value is estimated at €1,5 million. For more information, see chapter 5.10.

Adjustment due to VAT fraud (N6)

VAT fraud (without complicity) represents the adjustment made to the output in the framework of the Supply and Use balancing procedure. For more details, see chapter 7.1.3.

Adjustment due to wages and salaries in kind (N7)

This exhaustiveness adjustment is performed in order to subtract from the intermediate consumption the value of fuels consumed for the private use of company cars. The calculation method for this income in kind is described in detail in chapter 7.1.3.

A summary of the total adjustments is shown in the table below:

Table 3.16.9: Summary of conceptual and exhaustiveness adjustments, NACE J, 2017 (€ million)

Type of adjustment	Output	Intermediate consumption	Gross value added
Allocation of FISIM	0,0	74,6	-74,6
Allocation of Insurance Output	0,0	4,9	-4,9
Other Conceptual	57,8	-3,5	61,4
R&D	32,8	0,0	32,8
Holding Gains	1,7	-1,6	3,3
Own-account software	28,0	0,0	28,0
Own-account TV	1,7	0,0	1,7
Literary and artistic originals	1,5	0,0	1,5
Relocation to trade	-3,2	-2,0	-1,3
Net taxes on products	-4,7	0,0	-4,7
Exhaustiveness	0,3	-0,7	0,9
VAT fraud (N6)	0,3	0,0	0,3
Wages & salaries in kind (N7)	0,0	-0,7	0,7
Balancing	0,0	-25,1	25,1
Total adjustments in NACE J	58,1	50,2	8,0

A summary of the Final estimate is presented in the following table:

Table 3.16.10: Summary, NACE Section J, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	3.226,5	2.085,3	1.141,2
Surveys and censuses	3.194,1	2.076,8	1.117,2
Administrative records	31,9	8,5	23,4
Combined data	0,0	0,0	0,0
Extrapolation and models	0,5	0,0	0,5
Adjustments	58,1	50,2	8,0
Data validation	0,0	0,0	0,0
Allocation of FISIM	0,0	74,6	-74,6
Allocation of Insurance Output	0,0	4,9	-4,9
Other conceptual	57,8	-3,5	61,4
Exhaustiveness	0,3	-0,7	0,9
Balancing	0,0	-25,1	25,1
Final estimate	3.284,6	2.135,5	1.149,1

3.17 Financial and insurance activities (NACE Rev.2 Section K)

Table 3.17.1: Description of NACE divisions, Section K

NACE Rev.2	Activity
64	Financial service activities, except insurance and pension funding
65	Insurance, reinsurance and pension funding, except compulsory social security
66	Activities auxiliary to financial services and insurance activities
K	Financial and Insurance activities

The values for output, intermediate consumption and value added by NACE divisions for Financial and Insurance activities are shown in the table below:

Table 3.17.2: Introductory Table, NACE Section K, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE K	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
64	3.728,0	2.405,4	1.322,6	74,1%	7,5%	6,5%	6,7%
65	387,9	268,3	119,6	6,7%	0,7%	0,6%	0,6%
66	1.391,1	1.048,3	342,7	19,2%	1,9%	1,7%	1,7%
K	5.506,9	3.722,0	1.785,0	100,0%	10,1%	8,8%	9,1%

From this table it is evident that the dominant activity is NACE 64 (Financial Service activities, except Insurance and Pension Funding).

The breakdown by NACE divisions and institutional sectors and the relevant shares are shown in the table below:

Table 3.17.3: NACE Section K by institutional sector, 2017

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
64	Output		3.726,5	1,4			3.728,0
	Interm. Consumption		2.405,1	0,3			2.405,4
	Gross Value Added	0,0	1.321,4	1,2	0,0	0,0	1.322,6
	% of sector in GVA	0,0%	99,9%	0,1%	0,0%	0,0%	100,0%
65	Output		386,0	1,9			387,9
	Interm. Consumption		267,9	0,3			268,3
	Gross Value Added	0,0	118,0	1,6	0,0	0,0	119,6
	% of sector in GVA	0,0%	98,7%	1,3%	0,0%	0,0%	100,0%
66	Output		1.371,2	0,4	19,5		1.391,1
	Interm. Consumption		1.037,0	0,4	10,9		1.048,3
	Gross Value Added	0,0	334,2	0,0	8,5	0,0	342,7
	% of sector in GVA	0,0%	97,5%	0,0%	2,5%	0,0%	100,0%
K	Output	0,0	5.483,7	3,8	19,5	0,0	5.506,9
	Interm. Consumption	0,0	3.710,1	1,0	10,9	0,0	3.722,0
	Gross Value Added	0,0	1.773,6	2,8	8,5	0,0	1.785,0
	% of sector in GVA	0,0%	99,4%	0,2%	0,5%	0,0%	100,0%

3.17.1 Financial service activities, except insurance and pension funding (NACE 64)

NACE 64 division includes the activities of monetary intermediation (Central Bank of Cyprus and commercial banks), Central Agency for Equal Distribution of Burden and Financial Special Purpose Entities (SPEs).

Basis for NA figures

Administrative records

The main administrative data source for the calculation of Output and Intermediate Consumption of NACE 64 is the Central Bank of Cyprus (CBC).

Regarding other monetary intermediation (MFIs), the CBC provides CYPSTAT with all the necessary data for commercial banks through an analytical Quarterly Profit and Loss Survey Data (QPLSD) report. It should be noted that the Output of the commercial banks consists of the Financial Intermediation Services Indirectly Measured (FISIM) and the actual service charges. These charges comprise of the commissions from services rendered to others, as well the fees paid to the MFIs (i.e. for credit cards, for maintenance of accounts etc.) and the rentals receivable from buildings and

premises. This Output (excl. FISIM) equals to €379,7 million for 2017, while the FISIM output is estimated at €1.254,0 million for all MFIs (see below).

The intermediate consumption of the commercial banks is also obtained from the analytical QPLSD report. It comprises of operating and administrative expenses, commission and fees payable, as well as rentals paid for buildings. For 2017 this value amounts to €334,1 million. An analysis of the Output (excl. FISIM) and the Intermediate Consumption is shown in the table below:

Table 3.17.4: Gross Value added, MFIs, 2017 (€ million)

Commissions and fees receivable	343,4
Other revenues	21,8
Rentals and leases receivable	14,5
Output	379,7
Commissions and fees payable	40,1
Direct and Administrative expenses	270,3
Rentals and leases payable	23,7
Intermediate consumption	334,1

In the activity of other monetary intermediation, apart from the commercial banks, a specific organisation, the Central Agency for Equal Distributions of Burden is also included in NACE 64. This organisation was created after the 1974 invasion with the objective to grant long-term low-interest loans to refugees who satisfy specific requirements. The ultimate purpose is to facilitate the financing under favourable conditions of those citizens that were seen to be affected negatively from the 1974 invasion, more than the rest of the population.

Since this organisation is one of the semi-government organisations, classified under general government sector (S.13), its Output is estimated as the sum of its costs. The data is obtained from the GFS section and for 2017 its Output is equal to €1,4 million. The Intermediate Consumption is €0,3 million and thus the Gross Value Added is estimated at €1,1 million.

The Output of Central Bank of Cyprus is measured as the sum of its costs. Data is obtained from the annual report of the CBC and more specifically from the Profit and Loss Statement. The Output for 2017 is estimated at €43,1 million, of which €13,7 million is the intermediate consumption. The gross value added of the CBC is equal to €29,4 million and it comprises from the compensation of employees (€27,9 million) and the depreciation (€1,5 million).

According to ESA 2010, commissions and fees for directly measured services invoiced by the central bank both in respect of resident and non-resident units should be allocated to these units. Only the

part of the total central bank output (sum of costs less commissions and fees) which is not sold has to be, by convention, allocated to the intermediate consumption of other FIs. CYSTAT investigated the issue and the CBC clarified that the fees and commission income is only obtained from the services provided to the banks and not to other sectors. Thus, there is no impact on GDP. The fee and commission expenses paid by the commercial banks to the CBC are already included in their intermediate consumption.

Apart from the above mentioned units, in NACE 64 are incorporated the activities of the financial Special Purpose Entities (SPEs). Following the recommendations of the Task Force on Multinationals, these SPEs are classified as captive financial institutions and the valuation of their output is estimated as the sum of costs.

Since these SPEs do not have a physical presence in Cyprus, the output is equal to the production expenses and thus the impact to the gross value added is zero. Data on the intermediate consumption of these SPEs is obtained directly from the CBC through information from the banking system and the turnover of professional, scientific and technical activities. For 2017 these inputs were estimated at €1.112,1 million. This value does not include FISIM and thus, after the relevant allocation of FISIM (€947,2 million) based on the stock of loans and deposits of these SPEs companies, the total intermediate consumption – and subsequently output – is estimated at €2.059,3 million.

A table summarizing the basis for NA figures (incl. FISIM allocation) is presented below:

Table 3.17.5: Summary, Basis for NA figures (incl. allocation of FISIM), NACE 64, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Other monetary intermediation (MFIs)	1.633,7	334,1	1.299,6
<i>of which:</i>			
<i>Commercial Banks</i>	379,7	334,1	
<i>FISIM output</i>	1.254,0		
Central Agency for Equal Distributions of Burden	1,4	0,3	1,1
Central Bank of Cyprus	43,1	13,7	29,4
Financial Special Purpose Entities (SPEs)	2.059,3	2.059,3	0
TOTAL	3.737,4	2.407,3	1.330,1

It should be noted that the payments institutions previously recorded in NACE 64, are as of 2016 classified in NACE 66 (please see section 3.17.3 below).

Extrapolation and models (FISIM)

As it is described above, the output of the commercial banks, apart from the fee and commissions income, it also includes the FISIM. The FISIM accounts for the services provided by the financial intermediaries for which no explicit charges are made. Service income is generated by paying or charging different rates of interest to borrowers and lenders. The intermediaries pay lower rates of interest that would otherwise be the case to those who lend them money, and charge higher rates of interest to those who borrow from them.

The calculation of FISIM output is made on a quarterly basis, in accordance with the methodology described in chapter 14 of the ESA 2010. To obtain the FISIM output (that will be allocated to domestic users) of the resident financial intermediaries (FIs) by resident user institutional sector, the internal reference rate (IRR) is calculated on interbank loans and deposits as follows:

Ratio between interest receivable on loans incurred plus interest payable on deposits held between resident FIs, to the stock of loans plus the stock of deposits held by resident FIs on behalf of other resident FIs.

To obtain the FISIM output (to be exported) of the resident financial intermediaries (FIs) by non-resident user institutional sector, the external reference rate (ERR) is calculated on interbank loans and deposits as follows:

Ratio of interest receivable on loans plus interest payable on deposits between resident FIs and non-resident FIs, to the stock of loans plus the stock of deposits between resident FIs and non-resident FIs.

It should be noted that for the calculation of FISIM output in Cyprus, FIs refer only to the sub-sector of S.122 (deposit taking corporations) and it does not include the CBC.

The sub-sector S.125 (other financial intermediaries, except insurance corporations and pension funds), is not taken into consideration for the calculation of FISIM output and of the reference rates. The main units observed are non-money investment funds and security dealers on own-account that grant loans to related parties (subsidiaries), with an insignificant, non-market rate.

For the calculation of FISIM output, data is needed in the form of a table of stocks of loans and deposits categorised by user sectors and the corresponding accrued interest. The interest is calculated after reallocation of interest rate subsidies to the recipients. The total FISIM is calculated as the sum of FISIM on loans granted to each institutional sector and of FISIM on deposits of the institutional sector.

The FISIM on loans is obtained as follows:

(Interest receivable on loans) minus (stock of loans multiplied by reference rate)

The FISIM on deposits is obtained as follows:

(Stock of deposits multiplied by reference rate) minus (interest payable on deposits)

For the calculation of domestic output, the reference rate above refers to the internal reference rate (IRR), whereas for the calculation of export of FISIM it refers to the external reference rate (ERR).

In order to estimate FISIM, the CBC provides CYSTAT with the quarterly data of stock of loans and of deposits by institutional sector, by commercial bank and by currency. Quarterly data on interest receivable on loans & interest payable on customers' deposits is obtained from the QPLSD. The data of stock of loans, as well as of interest payable include the non-performing loans (NPLs), since these NPLs are included in the balance-sheet of the respective MFIs.

It should be noted that CYSTAT is examining the implicit rate for each sector and currency for all MFIs as reported in the QPLSD. In case that an implausible rate or a break in the series exists CYSTAT requests, via CBC, clarification from the MFIs with the questionable data. In several cases MFIs are correcting their reports or some of them are providing explanations for the peculiar data they had submitted.

For general government sector (S.13), information on the stock of loans and of deposits, as well as the respective interest is drawn from the Financial Report of the Treasury of the Republic. It should be noted that the S.13 loans from the European Stability Mechanism (ESM), as well as the International Monetary Fund (IMF) are not included in the import of FISIM calculations. On the other hand, loans granted from the European Investment Bank (EIB) and the Council of Europe Development Bank (CEDB) are included in FISIM of S.13.

The analysis of the stock by currency, revealed the importance to separately calculate the reference rates for US dollars and for euro (also applied to the other foreign currencies). Since the data provided by the CBC and the QPLSD is on a quarterly basis and by currency (EUR and USD), the calculation of the annual FISIM derives from the sum of the four quarters of the FISIM calculated for EUR and from the sum of the four quarters of the FISIM calculated for USD.

The FISIM output of NACE 64 consists of the FISIM produced by sub-sector S.122 for the domestic users (€1.146,7 million) and the FISIM to be exported (€107,3 million). For 2017 the total FISIM output for this activity is estimated at €1.254,0 million. Apart from the FISIM produced in the

resident economy, there is also import of FISIM which is produced by non-resident FIs and it is consumed by resident users. The import of FISIM (as it is shown in the ANNEX 3.II) it is estimated at €1.012,2 million for 2017.

The allocation of FISIM output domestically produced and of import of FISIM to the relevant users and items is as follows:

- FISIM consumed by S.11 and S.12 (excl. S.122 & S.125) is allocated as intermediate consumption to the relevant industry users.
- FISIM consumed by S.14 as owners of dwellings or as owners of unincorporated enterprises is allocated as intermediate consumption to the relevant industry users.
- FISIM consumed by S.14 as consumers is treated as household final consumption expenditure.
- FISIM consumed by S.13 is recorded as general government final consumption expenditure.
- FISIM consumed by S.15 is treated as NPISH final consumption expenditure
- FISIM produced by resident FIs and consumed by non-resident units is classified as exports of services.
- The total value of import of FISIM is recorded in the imports of services.

The calculation of FISIM is presented in the ANNEX 3.II at the end of chapter 3.

A summary table shows the relevant treatment of FISIM for 2017:

Table 3.17.6: Summary, Output and Import of FISIM, 2017 (€ million)

Sector	Allocated as	FISIM Output	Import of FISIM	Total
S.11	P2	505,5	179,7	685,3
S.12 (excl. S.122 & S.125)	P2	181,2	814,3	995,5
S.13	P3	4,2	-12,5	-8,3
S.14		452,0	30,6	482,6
<i>of which as owners of dwellings &</i>	<i>P2</i>	<i>246,0</i>	<i>-1,2</i>	<i>244,8</i>
<i>of which as consumers</i>	<i>P3</i>	<i>206,0</i>	<i>31,8</i>	<i>237,8</i>
S.15	P3	3,8	0,0	3,8
S.2	P6	107,3		107,3
TOTAL		1.254,0	1.012,2	2.266,2

The allocation of intermediate consumption (P2) to the relevant user industries, as well as the exports (P6) and imports of FISIM (P7) does not have any impact to the GNI. However, the general

government and the NPISH intermediate consumption, as well as the household final consumption expenditure (P3 in the above table), have an impact to the GNI.

Moreover, since the intermediate consumption of S.13 and of S.15 should include this expenditure for FISIM consumption, the output of these sectors (and relevant NACEs) is also affected since it is calculated as the sum of costs.

The impact of the FISIM for each approach (production, expenditure and income), as well the impact to the GNI is shown in the table below:

Table 3.17.7: Impact of FISIM, 2017 (€ million)

	PRODUCTION APPROACH	
P1	Output of goods and services	1.288,5
P2	Intermediate consumption	1.269,9
B1G	Gross value added	18,6
		18,6
	EXPENDITURE APPROACH	
P3	Total final consumption expenditure	406,5
P3	<i>Household final consumption expenditure</i>	399,6
P3	<i>NPISH final consumption expenditure</i>	8,7
P3	<i>General government final consumption expenditure</i>	-1,8
P6	Exports of goods and services	134,6
P7	Imports of goods and services	522,5
		18,6
	INCOME APPROACH	
B2G+B3G	Gross operating surplus and mixed income	18,6
B1*G	Gross domestic product	18,6
D4	Property income received from the rest of the world	-134,6
D4	Property income paid to the rest of the world	-522,5
B5*G	Gross national income	406,5

3.17.2 Insurance and pension funding, except compulsory social security (NACE 65)

The units classified under NACE Division 65 are the Life insurance companies, the Non-life insurance companies, the Reinsurance Companies and the Pension funding.

Basis for NA figures

The main data source for insurances is the analytical *Structural Business Statistics (SBS)* data collected by the Insurance Companies Control Service according to the Council Directive, No 91/674/EEC on the annual accounts and consolidated accounts of insurance undertakings.

The method used to estimate gross output and value added for Life is the Sum of Cost, while for Non-Life Insurance and for Reinsurance services is the Normal Approach.

The results are presented in the following categories:

Table 3.17.8: Gross Value added, NACE Division 65, 2017 (€ million)

NACE Rev. 2	Classification	Gross Output	Intermediate Consumption	Value Added
65.11	Life Insurance services	100,4	68,1	32,3
65.12	Non-Life Insurance services	248,6	182,2	66,4
	- <i>Agriculture Insurance Organization (A.I.O.)</i>	1,9	0,3	1,7
	- <i>Other (accident, fire, marine, aviation, transport, motor vehicle, employer's liability)</i>	246,7	182,0	64,7
65.20	Reinsurance services	30,0	12,0	17,9
65.30	Pension funding services	8,4	8,4	0,0
65	Insurance Activity	387,4	270,8	116,6

a) Life Insurance (NACE Class 65.11)

According to ESA 2010, paragraph 3.74, the output should be calculated as follows:

premiums earned

plus premium supplements,

less benefits due

less increases (plus decreases) in life insurance technical reserves

The following table shows the results using the above algorithm. The figures obtained were extremely volatile, especially for the change in life insurance technical reserves. The main reason for not applying the above mentioned method was the negative value added for years 2013-2016. This output algorithm is applied every year on a trial basis and if the results are normal for more than 5 years, a change in method would be considered more appropriate. Therefore, the sum of cost approach is implemented, in order to carry out the estimates, which is described in Table 3.17.10.

Table 3.17.9: Gross Output & Value Added (using algorithm described in §3.74 of ESA 2010), NACE Class 65.11, 2013-2018

		2013	2014	2015	2016	2017	2018
	Premium Earned	358,4	359,6	349,4	316,1	371,7	393,0
+	Premium Supplements	47,2	50,7	38,9	24,4	23,7	21,3
-	Benefits due	467,5	334,7	311,9	271,6	266,5	243,2
(+)/-	Change in life insurance technical reserves*	172,2	-38,2	68,2	20,0	-6,6	-6,2
=	Gross Output	-234,1	37,4	8,1	48,9	122,3	164,9
-	Intermediate Consumption	62,6	66,4	66,0	55,4	68,1	84,3
=	Value Added	-296,7	-29,1	-57,9	-6,5	54,3	80,6

* Change in life insurance technical reserves is after excluding holding gains/losses

Nevertheless, since the figures obtained would not yield meaningful results, the sum of production costs plus an allowance for normal profit is used instead.

For Life-Insurance activity, the **Gross Output** is estimated using the sum of costs approach and the results are as follows:

Table 3.17.10: Gross Output, NACE Class 65.11, 2017

		(€ million)
	Intermediate Consumption	68,1
+	Compensation of employees	21,1
+	Operating Surplus (allowance for normal profit: 1.67%)	6,0
+	Consumption of Fixed Capital	5,2
=	Gross Output	100,4

Intermediate Consumption is calculated as follows:

Table 3.17.11: Intermediate Consumption, NACE Class 65.11 2017

		(€ million)
	Reinsurance services consumed by direct insurers	14,0
+	Portfolio Investment Income of reinsurers on their share of the gross technical provisions of the enterprise	0,9
+	Commissions for total insurance business	38,0
+	Other external expenditure on goods and services	15,1
=	Total Intermediate Consumption	68,1

It emerges from the table above, that commissions for total insurance business and other external expenditure on goods and services are by far the main components of Intermediate Consumption. The calculation is based on GNI recommendations and the SBS definitions (Methodological Manual for Insurance Services Statistics).

Compensation of Employees corresponds to a specific variable as defined in SBS definitions.

Operating Surplus is estimated in a way that an allowance for normal profit is recorded by using a rate of return on own funds. As shown in the table below this rate of return is calculated to be 1,67% on a moving average for the period 2013-2017 based on the SBS data source. It should be noted that the estimation of Rate of Return is based on Composite-Life Insurance data:

Table 3.17.12: Estimation of Rate of Return on Own Funds, 2017, Life Insurance

		2013	2014	2015	2016	2017
	Operating surplus (€ million)	35,5	-3,9	50,8	27,4	36,5
x	Ratio: own funds/(own funds <i>plus</i> technical provisions)	0,176	0,167	0,177	0,160	0,156
=	Operating surplus attributed to own funds (€ million)	6,25	-0,65	9,00	4,38	5,68
/	Own funds as represented by Capital and Reserves (€ million)	325,1	317,2	336,5	252,4	255,5
=	Rate of Return on own funds	1,92%	-0,21%	2,68%	1,74%	2,22%
	Rate of return on own funds - Average for the period	1,67%				

As it is shown in the table above the operating surplus is multiplied with a ratio own funds / (own funds *plus* technical reserves) in order to obtain a measure of the part of operating surplus attributed to own funds. This value is then divided by the total own funds in order to obtain an indication of the rate of return on own funds for each year.

For the year 2017 the estimation of operating surplus was made by taking Rate of return on own funds- Moving Average for the period 2013-2017 and applying it to own funds for all life insurances.

Consumption of Fixed Capital: The estimation is based on PIM Model.

Gross Value Added is calculated simply by adding Operating Surplus, Compensation of Employees and Consumption of Fixed Capital.

b) Non-Life Insurance (NACE Class 65.12)

Agriculture Insurance Organization (A.I.O.)

The Central Government subsector also contributes to NACE 65 production. The production of the Agricultural Insurance Organisation (semi-government organisation) is attributed to NACE 65 as indicated in the table below. The procedure followed for the production of the data is the same as for the rest of the Central Government subsector as described in section 3.18.

Table 3.17.13: Central Government subsector, Summary for NACE 65, 2017 (€ million)

P1	Output	1,93
P2	Intermediate Consumption	0,27
B1g	Gross Value added	1,66
B1n	Value added, net	
D1	Employees compensation	1,66

Other Non-Life Insurance

According to ESA 2010, paragraph 3.74, the gross output should be calculated as shown in the table below:

Table 3.17.14: Gross Output, NACE Class 65.12, 2017

		(€ million)
	Premiums earned	477,9
+	Premium supplements	11,1
-	Adjusted claims incurred	242,3
=	Gross Output	246,7

Premiums earned are calculated as follows:

Table 3.17.15: Premiums Earned, NACE Class 65.12, 2017

		(€ million)
	Premiums written	499,2
+	Change in the reserves for unearned premiums	-15,6
+	Provision for unexpired risks	-0,8
-	Provisions for bonuses and rebates	4,9
=	Premiums earned	477,9

Premium Supplements are calculated as follows:

Table 3.17.16: Premium Supplements, NACE Class 65.12, 2017

		(€ million)
	Portfolio Investment Income	20,5
+	Portfolio Investment Income of reinsurers on their share of the gross technical provisions of the enterprise	1,0
-	Income earned by the Investment of own funds (20,5*50,5%)	10,4
=	Premium Supplements	11,1

Income earned by the investment of own fund is excluded from premium supplements. The calculation of this variable is based on a pro rata approach ratio that comes out from Non-Life Insurances and is multiplied by the Portfolio Investment Income:

Table 3.17.17: Pro rata approach, NACE Class 65.12, 2017

		(€ million)
	Own funds (Capital and Reserves)	265,7
/	Own funds and Technical Provisions	525,7
=	Pro-rata-approach ratio (%)	50,5%

It should be noted that the Portfolio Investment Income excludes realised and unrealised holding gains and losses.

Adjusted Claims Incurred is calculated using accounting data on the actual claims incurred plus the change in equalisation provisions. The formula for adjusted claims incurred is as follows:

Table 3.17.18: Adjusted Claims Incurred, Nace Class 65.12 2017

		(€ million)
	Claims written (paid during the period)	229,94
+	Change in provisions for claims outstanding	24,81
+	Change in the equalization provision	0,01
-	External and Internal claims related cost	12,43
=	Adjusted Claims Incurred	242,3

Intermediate Consumption is calculated as follows:

Table 3.17.19: Intermediate Consumption, NACE Class 65.12, 2010

		€ (million)
	Reinsurance services consumed by direct insurers	60,4
+	Portfolio Investment Income of reinsurers on their share of the gross technical provisions of the enterprise	1,0
+	Commissions for total insurance business	55,3
+	Other external expenditure on goods and services	65,3
=	Total Intermediate Consumption	182,0

It emerges from the table above that reinsurance services consumed by direct insurers is one of the main components for calculating IC for Non-Life Insurance services. Also, commissions for total insurance business and other external expenditure on goods and services constitute a significant amount in the total of IC.

Gross Value Added is calculated simply by deducting Total Intermediate Consumption from Gross Output.

c) Reinsurance services (NACE Class 65.20)

Reinsurance companies in Cyprus export all their services abroad, while Cyprus Insurances (Life and Non-Life companies) import their reinsurance service from non-domestic Reinsurance companies.

The output of reinsurance services is calculated as show in the table below:

Table 3.17.20: Gross Output, NACE Class 65.20, 2017

		(€ million)
	Premiums earned less commissions payable	59,8
+	Premium supplements	6,9
-	Adjusted claims incurred	36,7
=	Gross Output	30,0

Premiums earned less commissions payable are calculated as follows:

Table 3.17.21: Premiums Earned less commissions payable, NACE Class 65.20, 2017

		(€ million)
	Premiums written	61,4
+	Change in the provisions for unearned premiums	-0,2
+	Provision for unexpired risks	0,1
-	Provisions for bonuses and rebates	0,0
-	Reinsurance commissions and profit participation	1,5
=	Premiums earned	59,8

Due to the fact that Insurance companies provide the variable called “Reinsurance commissions and profit participations” the whole amount is deducted in the calculation of Premiums written.

Premium Supplements are calculated as follows:

Table 3.17.22: Premium Supplements, NACE Class 65.20, 2017

		(€ million)
	Portfolio Investment Income	13,9
+	Portfolio Investment Income of reinsurers on their share of the gross technical provisions of the enterprise	1,6
-	Income earned by the Investment of own funds (13,9*62,1%)	8,6
=	Premium Supplements	6,9

Regarding Portfolio Investment Income realised and unrealised holding gains and losses are excluded.

Income earned by the investment of own fund is excluded from premium supplements. The calculation of this variable is based on a pro rata approach ratio that comes out from Reinsurance companies and is multiplied by the Portfolio Investment Income:

Table 3.17.23: Pro rata approach, NACE Class 65.20, 2017

		(€ million)
	Own funds (Capital and Reserves)	139,3
/	Own funds and Technical Provisions	224,4
=	Pro-rata-approach ratio (%)	62,1%

Adjusted Claims incurred is calculated using accounting data on the actual claims incurred plus the change in equalisation provisions. Cyprus Reinsurances report a negligible amount for “equalisation provisions”. The formula for adjusted claims incurred is as follows:

Table 3.17.24: Adjusted Claims Incurred, Nace Class 65.20, 2017

		(€ million)
	Claims written (paid during the period)	32,4
+	Change in provisions for claims outstanding	4,3
+	Change in the equalisation provision	0,0
-	External and Internal claims related cost	0,1
=	Adjusted Claims Incurred	36,7

Intermediate Consumption is calculated as follows:

Table 3.17.25: Intermediate Consumption, Nace Class 65.20, 2017

		(€ million)
	Reinsurance services consumed by reinsurers	3,3
+	Portfolio Investment Income of reinsurers on their share of the gross technical provisions of the enterprise	1,6
+	Commissions for total insurance business	6,6
+	Other external expenditure on goods and services	0,6
=	Total Intermediate Consumption	12,0

Allocation of insurance output

Regarding the value of the output of Life Insurance, the whole amount is recorded as Household Final Consumption Expenditure (HFCE).

The value of the output of Non-Life insurance is allocated to policyholders (use side) in proportion to their actual premiums payable. Since the Insurance survey does not provide information on premiums by sector, but only the total premiums, estimations for the allocation of the output are made.

The values on premiums payable for Sector S11, S14 (unincorporated enterprises) and S15 are extracted from the annual economic surveys, while data for S12 and S13 is collected from administrative sources. All this data is available on an annual basis.

However, regarding sector S14 (households), premiums are only available for year 2015, where the Household Budget Survey (HBS) was conducted. Since the percentage of premiums for households is very important, it was considered as necessary to calculate the allocation of insurance output using actual data for years where HBS is available. For premiums related to insurance of dwellings, the source is also HBS, but the relative information is also available on an annual basis through the EU-SILC (statistics on income and living conditions) survey. The difference between the two sources was marginal for year 2015, since the HBS recorded €37,7 million while the EU-SILC €38,5 million.

It should be noted that there are no premiums payable by non-residents (S2), since the premiums that tourists pay in order to rent a car are considered as premiums of the rental company (intermediate consumption).

The difference between non-life premiums from the insurance survey and from the above mentioned sources was evenly distributed to all sectors. The analytical results for years 2015 are shown in the table below:

Table 3.17.26: % of Allocation by sectors, € million

	S11	S12	S13	S14 households	S14B unincorp	S14 dwellings	S15	TOTAL
Premiums payable from sources	101,5	16,6	1,8	222,5	11,8	37,7	1,7	393,6
Distribution of difference	25,5	4,2	0,4	55,9	3,0	9,5	0,4	98,9
Premiums payable to be allocated	127,0	20,8	2,2	278,4	14,8	47,1	2,2	492,5
% by sector	25,8%	4,2%	0,4%	56,5%	3,0%	9,6%	0,4%	100%

These results were used for the estimation of Intermediate Consumption (IC), General Government Final Consumption Expenditure (GFCE) and HFCE for years 2015 onwards (after the deduction of exports). These percentages will be reviewed when the new HBS results will be available.

Direct non-life output is allocated:

- 43.5% to IC in S11, S12, S13, S14B, S14-Dwellings and S15
- 56.5% to HFCE

Direct non-life imports are entirely allocated to IC in S11.

The allocation of the Insurance service charge to NACEs is made after the deduction of premiums from the IC of each economic activity (from annual economic surveys and from administrative sources). It should be noted that the information on the premiums for each year is used in order to distribute analogously the Insurance service charge to the respective NACEs.

Regarding Sector S13 and S15, premiums that were paid by locals are deducted from IC and Output and subsequently the service charge of insurance is added (i.e. for 2017 $0.4\% \times 175,7 = \text{€}0,7$ million).

Regarding Exports, Central Bank of Cyprus, conducts the BOP survey and provide to Cystat, exports of Direct Insurance and exports of Reinsurance using the methodology according to ESA 2010. The

use of the methodology ensures that premium supplements are already included. Furthermore, these amounts are also included in D441 paid to the Rest of the World and D441 received from the Rest of the World respectively. For more detailed description please see chapter 8.4.4.1.

It should be noted also that Central Bank of Cyprus conducts the BOP survey and provides to Cystat the total amount of imports which are calculated using the methodology according to ESA 2010, paragraph 3.74.

Since the Central Bank of Cyprus provides the total amount of imports, the following method is used to distinguish between direct insurance and reinsurance services

Imports of reinsurance are estimated using the analytical SBS data collected by the Insurance Companies Control Service. The aforementioned authority provides Cystat with information for reinsurance balance of Insurance/ reinsurance companies which is included in their intermediate consumption. The whole amount of Reinsurance Balance is imported from non-resident reinsurance companies and it is considered to be the Intermediate consumption of Reinsurance ceded. Therefore, the amount remaining from the total imports refers to the imports of direct insurance. As there are no imports for direct life insurance, this amount is considered to be the imports for Non-Life Insurance. For simplistic reasons and as it is not considered that resident households would seek non-life insurance service, the amount of non-life imports is allocated to the Non-Financial Sector (S11).

In conclusion, the supply and use side for CPA's of Insurance services is as follows:

Table 3.17.27: Supply and use side for Insurance CPAs, € million

	Life	Non Life	Reinsurance
Domestic Output	100,4	248,6	30,0
Imports		72,4	77,7
Total Supply side	100,4	321,0	107,6
Intermediate Consumption		145,5	77,7
Private Final Consumption Expenditure	100,4	99,3	
Exports		76,1	30,0
Total Use side	100,4	321,0	107,6

From the above information the following allocation of insurance service charge to sectors occurs:

Table 3.17.28: Allocation of Insurance service charge to sectors, € million

	S11	S12	S13	S14 households (PFC)	S14 unincorp	S14 dwellings	S15	S2 (exports)	Total
Direct Non Life Insurance	42,1	7,4	0,8	99,3	5,3	16,8	0,8	76,1	248,6
Direct Life				100,4					100,4
Reinsurance								30,0	30,0
Imports	72,4	77,7							150,0
Total	114,4	85,1	0,8	199,7	5,3	16,8	0,8	106,1	529,0

d) Pension funding (NACE Class 65.30)

The units classified under NACE Class 65.30 are the autonomous pension funds. Their mission is simply to collect contributions, pay retirement benefits and manage the resulting funds by investing them in financial and non-financial assets. Due to the fact that these units have no employment at all, the value added of these units is taken to be equal to zero (Gross Output equals Intermediate Consumption).

The data source for the calculation of Intermediate Consumption and Gross Output is the Supervisory Control Service for Pension Funds (administrative data). Pension Funds submit for checking purposes their economic statements according to a specified format. The data is prepared in an aggregated form, as presented in the table below:

Table 3.17.29: Pension Funding, 2017, € million

Revenues	
Contributions by members	106,6
Contributions by employers	137,0
Interest and other revenues	32,1
Transfers	0,8
Total	276,4
Expenses	
Benefits	163,7
Operational expenses	8,4
Transfers	0,8
Total	172,9
Increase in Reserves	103,5

Note: Interest and other revenues Includes realized and unrealized holding gains/losses.

Total Actual Pension Contributions is equal to the sum of contributions by members and employers. **Benefits due** is also clearly identifiable from the respective category in expenses. **Total Supplementary Contributions** are equal to the investment income of the pension funds technical reserves, and are not directly available from the administrative source. The specified format of submitted economic statements is such that the realized/unrealized holding gains/losses cannot be separated from the investment income in the category “Interest and other revenues”. Consequently, this output component is treated together with the **change in actuarial reserves** as a residual, since gross output is taken to be equal to intermediate consumption. **Intermediate Consumption** is equal to the “operational expenses”, which basically include broker’s fees and bank charges.

Therefore, the national accounts variables for pension funding activity are calculated as follows:

Table 3.17.30: Gross Value Added Pension Funding, 2017

		€ million
	Intermediate Consumption	8,4
	Total Actual Pension Contributions	243,6
-	Benefits due	163,7
+	Total Supplementary Contributions (investment income from technical reserves) minus Change in the actuarial reserves	71,4
=	Gross Output	8,4
	Value Added	0,0

3.17.3 Activities auxiliary to financial services and insurance activities (NACE 66)

Basis for NA Figures

Surveys and Censuses

NACE 66 division includes the activities of administration of financial markets (NACE 66.11 – the Cyprus Stock Exchange and the Cyprus Security and Exchange Commission), security and commodity contracts brokerage activities (NACE 66.12), other activities auxiliary to financial services, except insurance and pension funding (NACE 66.19), activities auxiliary to insurance and pension funding (NACE 66.2) and fund management activities (NACE 66.3).

The Cyprus Stock Exchange is a public corporate body, responsible mainly for the operation of the stock exchange system as well as for providing services to the investors, stock brokers, public companies etc. The Cyprus Securities and Exchange Commission (CySEC) is the independent public supervisory authority responsible for the supervision of the investment services market and transactions in transferable securities carried out in the Republic of Cyprus. Enterprises which are

classified under the security and commodity brokerage and fund management activities are Cypriot investment firms regulated by CySEC and are granted with the relevant license for the provision of the appropriate financial services. Payment institutions are enterprises which operate under licence from Central Bank of Cyprus and fall in the classification of other activities auxiliary to financial services. These enterprises deal with the provision of intermediary services in money transfer, currency exchange services and other payment services.

The data source for this division, with the exception of NACE 66.2 for which an exhaustiveness adjustment is made, is the “Financial Services survey”. The required data is collected annually through the financial statements of the enterprises which collects data on the basic economic characteristics on the structure and development of the section such as output, intermediate consumption, employment, investment, etc. The survey covers all Cypriot investment firms regulated by CySEC and the Central Bank of Cyprus that are active in the reference year.

Valuation of Output

Gross output of the Cyprus Stock Exchange is defined as the revenue collected in the form of trading fees on transactions carried out, annual contributions by members and other fees charged for provisions of services (listing, registration etc.). Gross output of the CySEC is defined as the fee paid annually to the Commission in accordance to relevant legislation, by the Cyprus Stock Exchange, Cypriot investment firms, Undertakings for Collective Investment in Transferable Securities (UCITS) and management enterprises, issuers and other revenue from services provided.

Gross output in the security and commodity brokerage, fund management activities is defined as the income from brokerage fees on stocks, foreign exchange and securities, portfolio management services, income from services relating to the initial listing of public companies, income from provision of consultancy, general management fees and other supplementary services provided. Gross output in payment institution activities is defined as income from provision of intermediary services in money transfer, currency exchange services and other payment services.

Income generated from the provision of financial services in the division regarding the brokerage fees, is the margin between buying and selling prices apply also to equities, investment fund shares and foreign currencies.

The Profit & Loss of the business accounts of the foreign currency trading companies describe “fee and commission income”. From the accounting notes and according to our understanding, commissions represent the trade margin on the currency exchange, while fee is an independent charge, either a standard one or as a percentage of the volume of the transaction. Income from

operating transactions for own accounts, realised holding gains or losses are excluded from the valuation of output.

Intermediate consumption

The results of the financial survey activities are used to calculate intermediate consumption in the section. The survey contains information on production expenses (fuels, electricity, repairs, services by others, commissions paid, underwriting expenses, etc.), administrative expenses (telephone and postage, accounting and legal services, advertising, and banking charges, other general office expenses), and rentals paid for buildings and machinery.

Gross value added is derived directly as the difference between output and intermediate consumption. The corresponding values are shown in the table below:

Table 3.17.31: Summary, Surveys & Censuses, NACE 66, 2017 (€ million)

NACE Rev. 2	Activities auxiliary to financial services and insurance activities	Output	Intermediate Consumption	Gross Value Added
66.11.1	Activities of stock exchanges, commodity exchanges etc. (Cyprus Stock Exchange)	4,6	1,1	3,5
66.11.2	Administration and monitoring of financial markets (Cyprus Security and Exchange Commission)	5,5	2,5	3,0
66.12	Security and commodity contracts brokerage activities (Cyriot Investment Firms)	1.234,1	896,0	338,1
66.3	Fund management activities (Fund Managers)	21,3	14,6	6,7
66.19.9	Other activities auxiliary to financial services, except insurance and pension funding (Payment Institutions)	106,6	80,6	26,0
		1.372,1	994,8	377,3

Administrative records

Administrative data includes services provided by the Deposit Guarantee and Resolution of Credit and Other Institutions Scheme (DGS). Its purpose is the compensation of the depositors covered under the scheme in the event that a credit institution is unable to repay its deposits and in certain conditions is the funding of the implementation of resolution measures. The DGS is constituted as a separate legal public entity and the exercise of its powers is carried out by the Management Committee which consists of employees of the Ministry of Finance and the Central Bank of Cyprus (CBC). CBC provides administrative support for the execution of the DGS's tasks and the valuation of

the Output is based on the sum of cost approach which is the total intermediate consumption i.e. operating and administrative expenses.

Table 3.17.32: Summary, Administrative records, NACE 66, 2017 (€ million)

NACE Rev. 2	Activities auxiliary to financial services and insurance activities	Output	Intermediate Consumption	Gross Value Added
66.19.9	Deposit Guarantee Scheme	0,4	0,4	0,0

Exhaustiveness Adjustments to the basis for NA figures

Apart from the conceptual adjustments (see section 3.4) and the Balancing (see chapter 6), the following exhaustiveness adjustments are made:

Adjustment due to employment reconciliation (N5)

An exhaustiveness adjustment of €15,3 million for 2017 is made as a result of the employment reconciliation framework concerning activities of insurance agents and stock brokers (NACE 66.2). For details see chapter 7.1.3.

Adjustment due to wages and salaries in kind (N7)

This exhaustiveness adjustment is performed in order to subtract from the intermediate consumption the value of fuels consumed for the private use of company cars. The calculation method for this income in kind is described in detail in chapter 7.1.3.

A summary outline of the adjustments to the Basis for NA Figures is presented in the following table:

Table 3.17.33: Summary of total adjustments, NACE K, 2017 (€ million)

Type of adjustment	Output	Intermediate consumption	Gross value added
Allocation of FISIM	0,0	995,5	-995,5
<i>NACE 64</i>	0,0	947,2	-947,2
<i>NACE 65</i>	0,0	-3,1	3,1
<i>NACE 66</i>	0,0	51,5	-51,5
Allocation of Insurance Output	0,0	85,1	-85,1
<i>NACE 64</i>	0,0	6,3	-6,3
<i>NACE 65</i>	0,0	77,7	-77,7
<i>NACE 66</i>	0,0	1,1	-1,1
Other Conceptual	-5,8	0,0	-5,8
R&D - NACE 64	0,6	0,0	0,6
Own-account software	6,6	0,0	6,6
<i>NACE 64</i>	1,4	0,0	1,4
<i>NACE 65</i>	2,0	0,0	2,0
<i>NACE 66</i>	3,2	0,0	3,2
Net Taxes (D214 minus D31)	-13,0	0,0	-13,0
<i>NACE 64</i>	-11,5	0,0	-11,5
<i>NACE 65</i>	-1,5	0,0	-1,5
<i>NACE 66</i>	0,0	0,0	0,0
Exhaustiveness	15,3	1,9	13,4
Employment Reconciliation (N5) - NACE 66	15,3	2,3	13,0
Wages and Salaries in kind (N7)	0,0	-0,3	0,3
<i>NACE 64</i>	0,0	0,0	0,0
<i>NACE 65</i>	0,0	-0,3	0,3
Balancing	0,0	-12,4	12,4
Total adjustments in NACE K	9,6	1.070,2	-1.060,6

An overall summary outline with all the adjustments made is presented in the following table:

Table 3.17.34: Summary, NACE Section K, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	5.497,4	2.651,8	2.845,5
Surveys and censuses	1.372,1	994,8	377,3
Administrative records	2.492,3	1.657,0	835,3
Combined data	0,0	0,0	0,0
Extrapolation and models	1.633,0	0,0	1.633,0
Adjustments	9,6	1.070,1	-1.060,6
Data validation	0,0	0,0	0,0
Allocation of FISIM	0,0	995,5	-995,5
Allocation of Insurance Output	0,0	85,1	-85,1
Other conceptual	-5,8	0,0	-5,8
Exhaustiveness	15,3	1,9	13,4
Balancing	0,0	-12,4	12,4
Final estimate	5.506,9	3.722,0	1.785,0

3.18 Real estate activities (NACE Rev.2 Section L)

The values for output, intermediate consumption and value added by NACE division for Real Estate activities are shown in the table below:

Table 3.18.1: Introductory Table, NACE Section L, 2017

NACE Rev.2	Output (€million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE L	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
68	2.152,5	553,2	1.599,3	100,0%	9,0%	7,9%	8,1%
L	2.152,5	553,2	1.599,3	100,0%	9,0%	7,9%	8,1%

The activity with the overwhelming importance is NACE division 68.2 “Renting and Operating of Own or Leased Real Estate”, which also includes the imputed rentals of owner-occupied dwellings. Output of NACE 68.2 is included in sector S.14.

Table 3.18.2: NACE Section L by institutional sector, 2017

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
68	Output	154,3			1.998,2		2.152,5
	Interm. Consumption	60,0			493,2		553,2
	Gross Value Added	94,3	0,0	0,0	1.505,0	0,0	1.599,3
	% of sector in GVA	5,9%	0,0%	0,0%	94,1%	0,0%	100,0%
L	Output	154,3	0,0	0,0	1.998,2	0,0	2.152,5
	Interm. Consumption	60,0	0,0	0,0	493,2	0,0	553,2
	Gross Value Added	94,3	0,0	0,0	1.505,0	0,0	1.599,3
	% of sector in GVA	5,9%	0,0%	0,0%	94,1%	0,0%	100,0%

Basis for NA Figures

Surveys and Censuses

The main activity of Real Estate activities section is the provision of services regarding buying and selling of own real estate, renting and operating of own or leased real estate and real estate activities on a fee or contract basis. The data sources for the activity are the annual economic services survey.

The main data source is the annual economic survey (“Services and Transport Survey”), which produces statistical data related to employment, output, value added, expenses and investments by economic activity based on the Statistical Classification of Economic Activities (NACE Rev.2). The survey of 2017 was conducted through personal interviews. It was carried out on a sampling basis for the enterprises employing less than 20 persons, while it covered all enterprises engaging 20 persons and over. The sample was based on the 2017 Business Register and was selected on a PPS basis (probability proportional to size). It was stratified by employment size group and by NACE. The unit of enumeration was the “enterprise”.

Gross output of the Real Estate activities section is defined as the value of services produced, net receipts from the sale of goods sold in the same condition as purchased (excl. VAT), income from rentals, plus other income. The value of sales of goods is the amount the customer is charged after the deduction of any discounts.

Gross value added is derived directly as the difference between output and intermediate consumption. The corresponding values are shown in the table below:

Table 3.18.3: Summary, Surveys & Censuses, NACE L, 2017

	<i>€ million</i>
Income from services provided	154,6
+ Sales of goods for resale	0,0
+ Income from rentals	0,9
Total turnover	155,5
+ Other operating income	0,5
Gross Output	156,0
- Intermediate consumption	53,5
Gross Value Added	102,5

Intermediate consumption is the sum of direct costs, administrative costs and rentals, which is obtained from the annual economic survey. In the Survey, direct production expenses mainly cover

fuels and lubricants, the cost of stationery and other materials, electricity and heating expenses, transport costs as well as repairs and other maintenance expenses. Under this category the payments for services rendered are also included. Administrative expenses include the cost of telephones, postage, legal and accounting services as well as other service costs, such as technical and consultancy services, advertising and entertainment expenses, bank charges etc.

Extrapolation and models

Extrapolation and models refer to NACE division 68.2 "Renting and Operating of Own or Leased Real Estate", which includes the actual and imputed rentals as well as the business rentals paid to households.

Dwelling Services

The activity of dwelling services, which is part of NACE 68, comprises all letting of residential accommodation, irrespective of ownership, and owner-occupation of dwellings (actual and imputed rentals). The calculation of the imputed rental value of owner-occupied dwellings is based on Commission Regulation (EC) No 1722/2005 on the principles for estimating dwelling services.

By convention, housing-service output covers services associated with both rented and owner-occupied dwellings. Rented-property services are evaluated with reference to the rent paid. The equivalent-rent approach, which relates the housing service to the rent the dwelling could yield, is adopted to evaluate owner-occupancy services. For this purpose, reference is made to a dwelling that is "similar" and close to the purchased property. The rental equivalent is designated as the imputed rent of the purchased property. The calculation procedure involves the application of the stratification method as it is recommended by the above mentioned Regulation.

The term "dwelling" is used in the National accounts in connection with dwelling services transactions and is identical in definition to the term "dwelling unit" used in the Population censuses and the "Building Permits and Housing Survey" (BPHS).

According to the Population & Dwellings Census and to the BPHS, *"a dwelling unit must consist of individual or related rooms, be self-contained, be intended for residential purposes, and allow a household to operate"*. Such dwelling units are, however, considered as dwellings only if they have a kitchen or kitchenette and they are in a building and not in a temporary structure. Dwellings also include the holiday homes (houses and apartments), as well as the empty dwellings.

A holiday home is *"a dwelling in which persons spend only their leisure time (e.g. at the weekend, while on leave or on holiday). It may be used by the owners themselves, let to third parties, or used by*

third parties free of charge. It may be let out by the owners or through a hotel operator or other organization". Holiday homes cover all kinds of leisure-time dwellings like the nearby weekend-houses, which are used for shorter periods many times in the year, and the more distant resort-homes. In the case of Cyprus, however, a clear distinction between the two cannot be made due to the very small size of the island, which allows an easy, access to all locations within a few hours travel.

The dwellings occupied and used as usual residencies were easily identified in the Census. Nevertheless, in order to distinguish between holiday homes and empty dwellings, the interviewers had to separately investigate each case by repeatedly visiting the dwelling and by obtaining information from the neighbours, as well as the municipal and other relevant authorities.

It should be noted that the reference for "garages" in Commission Regulation 1722/2005 is made to denote the "service" for the usage of "garages" as a parking lot (element of comfort). Generally, in Cyprus, every house has its own parking space located within the housing premises and therefore the "price" element associated to the utilization of the corresponding "parking service" is already incorporated in the market rent. Unlike many European countries where separate buildings are used for parking purposes and a renting charge is paid for this, there is no such practice in Cyprus.

Stratification method

According to the Commission Regulation, the output of dwelling services is estimated on the basis of the actual rentals of rented dwellings and on the imputed rentals of owner-occupied dwellings. The service produced by an owner-occupied dwelling must be measured by the value of the rentals of similar rented dwellings. The basic method adopted is the stratification method.

The basic principle of the stratification method is that the housing stock is divided into a number of strata. In the direct quantity-price estimation approach the actual average rentals of rented dwellings in each stratum are regarded directly as imputed rentals for the corresponding strata of owner-occupied dwellings.

One way of forming the stratum needed in the stratification method is to select the factors affecting the rent level. The variables that presumably affect the level of actual rentals can be divided into a number of groups: These groups can be dwelling characteristics (such as type, area, number of rooms, amenities), building characteristics (such as type, year of construction, number of dwellings, amenities), site characteristics (such as type, user charges), environmental factors (such as location of dwelling, infrastructure, stress factors), socioeconomic factors or contract characteristics (such as number of occupants of a dwelling, ownership structure).

The Cyprus stratification model that was developed for the purposes of estimating Dwelling services examined extensively the above-mentioned factors (dwelling and building characteristics) and the following list of stratification criteria was produced:

The stratification table with domains

Age	Size	Type	Heating	Location	District
Before 1960	1,2,3 Rooms	House	Yes	Urban	Nicosia
1961-1980	4 Rooms	Apartment	No	Rural	Famagusta
1981-2000	5 Rooms				Larnaca
2001 +	6,7 Rooms				Limassol
	8+ Rooms				Paphos

The above criteria were selected to be the ones with the greatest effect on rentals after using the method of multivariate regression analysis. This gives effectively 800 combinations of criteria (cells). The number of stratification criteria and of strata tabular analysis by far exceeds the requirements of principle 3 of the Commission Regulation.

The model underlying the significance tests is a regression formula with dummy variables in multiplicative form. One dummy regression takes account of the influence factors (dwelling characteristics) in a manner which states, for every dwelling included in the analysis, whether a particular category of characteristics, i.e. building age group, size of dwelling, etc, is applicable or not. The model's multiplicative variant reflects the idea that the average rent of a dwelling differs from the average rent of a notional "average dwelling" by percentage additions or deductions corresponding to its specific characteristics. This average dwelling, defined in the model, has average size, "average age", etc.

The outcome is that all the Cyprus stratification model's characteristics in each particular stratum have a highly significant effect on the level of the average rent. The characteristics with the greater effect on the average rent are: i) the age of building, ii) the size of the dwelling and iii) the location.

In the investigation originally additional characteristics were introduced such as length of tenancy, amenities, hot water supply, central location, type of dwelling etc., which due to the small sample size fail to produce signs that contribute effectively in one direction or another – to determining average rent levels.

Data Sources

A detailed breakdown of combinations of characteristics from the 2011 Population & Dwellings Census and the annual “Building Permits and Housing Survey” (BPHS) provide the database for estimating the dwelling stock. The most important data is the one provided by the Census, because of its level of detail and accuracy. For the estimation of dwelling services (dwelling stock * average rent), information is obtained from the Census and from the EUSILC (European Union Statistics on Income and Living Conditions).

One of the purposes of the Census, among many others, was to provide a complete and accurate picture of the stock of dwellings and of the living conditions of households. It showed also the regional distribution of dwellings and their status of tenure. The Population & Dwellings Census was a complete enumeration survey with obligation to provide information and highly accurate results were sought in a large number of fields with a regional differentiation. Information was required from owners and tenants of dwellings.

The census included all buildings with living accommodation, i.e. residential buildings and other buildings with living accommodations and the dwelling units they contained. Buildings used exclusively for non-residential purposes were not counted, however the Population Census included questions about:

- The local authority
- The user of dwelling (owner, tenant)
- The dwelling’s amenities (kitchen, kitchenette, bathroom, shower, heating)
- The number of rooms (excl. corridors, toilets, and areas less than 2x2m)
- The type of building (house, apartment, etc.)
- The year of completion
- Status of occupancy (usual residence, holiday homes, vacant dwelling)

It should be noted that for the few cases where the dwellings’ characteristics are “not stated” the relevant dwellings are allocated to the strata with the highest frequency. Specifically, for all locations/districts and types (houses/apartments) the “not stated” dwellings are consistently added to the middle stratum of 5 rooms, construction years 1961-1980 and non-heated.

The “Building Permits and Housing Survey” (BPHS) is an annual survey and is carried out on a sample basis, covering the building permits authorised by the municipalities and the district administration offices of the Ministry of Interior. The Survey aims at collecting basic data on housing and other construction activity, such as the distribution of construction expenditure by type of project, housing characteristics by district and size, etc.

The data is obtained through a specific questionnaire that is filled in by the enumerators of the Statistical Service. The principal information collected is:

- Characteristics of the project (district, location area, type of project and building, area in square metres, number of buildings and dwellings to be constructed)
- Demolitions (year of demolition, number of buildings and dwellings demolished)
- Expenditure in construction (work put in place by year, estimates for the additional amount needed for the completion of the projects)
- Type of buildings completed (floor area by type, total cost by type of building)
- Houses completed (number and type of houses completed, number and area of rooms, rooms by purpose of use, housing amenities, year of completion, total construction cost, number of floors, intended use of the house)
- Apartment buildings completed (number and type of buildings, number and area of apartments, apartments by number of bedrooms, amenities, year of completion, total construction cost of the building, number of floors)

Rentals

Information for the unfurnished rented dwellings by strata was obtained from the Census 2011 and an extrapolation was made for the following years based on the Consumer Price Index. Nevertheless, since the source for the actual rental per stratum had to be reviewed in accordance with the requirements of the Regulation 1722/2005 (at most 5 years), CYPSTAT considered the EUSILC as an alternative source for determining actual rentals as of 2016.

According to the Regulation, as a minimum, three characteristics (the size, the location and at least one other important feature of a dwelling) have to be used to stratify the housing stock; this stratification should produce a minimum of 30 cells. In addition, the breakdown of the housing stock has to be meaningful and representative of the total stock of dwellings. National Accounts divided the actual variables obtained by EUSILC for 2016 (around 500 observations) in 34 categories based on the breakdown of the total dwellings. The two important characteristics of the size and the location were ensured via the number of rooms and the district area variable respectively. The third

characteristic requested by the Regulation was either the age (old/new dwelling) or the type of the dwelling (house/apartment). The analytical 34 stratum used are shown below:

1. URBAN – Nicosia Houses 1-4 Rooms
2. URBAN – Nicosia Houses 5 Rooms
3. URBAN – Nicosia Houses 6 Rooms +
4. URBAN – Larnaca Houses All Rooms
5. URBAN – Limassol Houses 1-4 Rooms
6. URBAN – Limassol Houses 5 Rooms old
7. URBAN – Limassol Houses 5 Rooms new
8. URBAN – Limassol Houses 6 Rooms+
9. URBAN – Pafos Houses All Rooms
10. URBAN – Nicosia Apartments 1-3 Rooms old
11. URBAN – Nicosia Apartments 1-3 Rooms new
12. URBAN – Nicosia Apartments 4 Rooms old
13. URBAN – Nicosia Apartments 4 Rooms new
14. URBAN – Nicosia Apartments 5 Rooms old
15. URBAN – Nicosia Apartments 5 Rooms new
16. URBAN – Nicosia Apartments 6 Rooms+ old
17. URBAN – Nicosia Apartments 6 Rooms+ new
18. URBAN – Larnaca Apartments 1-3 Rooms
19. URBAN – Larnaca Apartments 4 Rooms
20. URBAN – Larnaca Apartments 5 Rooms+
21. URBAN – Limassol Apartments 1-3 Rooms
22. URBAN – Limassol Apartments 4 Rooms
23. URBAN – Limassol Apartments 5 Rooms+ old
24. URBAN – Limassol Apartments 5 Rooms+ new
25. URBAN – Pafos Apartments 1-3 Rooms
26. URBAN – Pafos Apartments 4 Rooms
27. URBAN – Pafos Apartments 5 Rooms+
28. RURAL – Nicosia Houses and Apartments all rooms
29. RURAL – Ammochostos Houses and Apartments all rooms
30. RURAL – Larnaca Houses All Rooms
31. RURAL – Larnaca Apartments All Rooms
32. RURAL – Limassol Houses All Rooms
33. RURAL – Limassol Apartments All Rooms
34. RURAL – Pafos Houses and Apartments All rooms

Note: where “old” refers to buildings constructed before 1980 and “new” to buildings constructed after 1981

By multiplying these average rentals per stratum as obtained from the 2016 EUSILC data to the dwelling stock of the relevant stratum, the Output is estimated for the relevant year. An extrapolation index based on the actual rentals of EUSILC for each year thereafter is applied. Information on the actual rental will be reviewed once the results of the 2021 Population & Dwellings Census become available.

It should be noted that the EUSILC was considered as a better extrapolation index compared to the Consumer Price Index (COICOP 04.1.1) and it is used instead, for the following reasons:

- *Availability of rentals for rural dwellings:* No such information is available in the CPI and since rural dwellings represent around 40% of the total dwellings it is crucial to have this data. This is especially problematic for the Ammochostos rural area (government controlled) where 8% of the total dwellings are located and there is zero representation in the CPI sample.
- *Use of average rent per square meter:* In the CPI, only a range of the square meter of the dwelling is available (i.e. 70-120 m²) and not the actual surface value. In the EUSILC the exact square meter value is available and it is considered as an asset, since it is more appropriate to calculate the average rent by multiplying the average rent per square meter to the square meter.
- *Better correlation between Census and EUSILC:* The actual rentals of the 2011 Census for several categories were compared with the rentals observed in EUSILC and CPI. The Census-EUSILC correlation was 0.95, while the Census-CPI correlation reached 0.73. The correlation was also higher when comparing the 2015 data for rentals obtained from HBS (Household Budget Survey); HBS-EUSILC correlation 0.87 and HBS-CPI correlation 0.74.
- *Replacement of dwellings is certified:* Since in the EUSILC a household remains in the sample only for four years, the ¼ of the total sample is always composed of new variables and thus the increase or decrease of the rent value can be well captured.

The questionnaire of the EUSILC includes a specific question on whether the dwelling is furnished or not, enabling the selection of the unfurnished ones, while for rental-free and cheap dwellings respondents provide the monthly imputed market rent, equal to the normal price for their area.

Output of dwelling services

In order to obtain the most accurate values possible for the calculation of dwelling services, the occupied dwellings for the base year 2011, as obtained from the Census, are divided into a large number of strata on the basis of several criteria. Since the Census provides information for the year the dwelling was completed, an extrapolation for year 2017 is made by using the annual BPHS described above. The stock of dwellings for year 2017 by location and type is shown in the table below:

Table 3.18.4: Dwelling stocks, 2017

	Owned dwellings	Rented dwellings	Holiday houses & Apartments	Empty dwellings	Total
Nicosia	100.433	21.650	13.341	14.764	150.189
Urban	72.905	19.237	7.386	11.764	111.292
Rural	27.528	2.413	5.955	3.001	38.897
Famagusta	13.824	2.672	12.821	6.014	35.331
Urban	0	0	0	0	0
Rural	13.824	2.672	12.821	6.014	35.331
Larnaca	43.453	8.701	13.403	11.211	76.768
Urban	24.980	6.104	4.514	5.459	41.057
Rural	18.473	2.598	8.889	5.752	35.711
Limassol	71.433	17.199	18.458	12.981	120.071
Urban	53.077	14.576	5.182	9.230	82.065
Rural	18.356	2.623	13.276	3.751	38.006
Paphos	26.477	8.841	21.020	12.929	69.268
Urban	16.543	7.426	8.949	7.798	40.716
Rural	9.934	1.415	12.071	5.131	28.552
Total	255.620	59.065	79.043	57.899	451.627
Urban	167.505	47.343	26.031	34.251	275.130
Rural	88.115	11.722	53.012	23.648	176.497

It should be noted that the table above does not include the dwellings (5.689 in total) that are rented via online platforms. These dwellings are excluded from the holiday houses & apartments and the empty dwellings categories. More information on the revenue from rentals of houses and apartments via online platforms is provided in chapter 3.15 (NACE I) and in chapter 7.

For the purpose of estimating average rentals for each combination of characteristics and every type of dwelling, the following approach was adopted:

For **rented dwellings** and for **owner-occupied dwellings**, the average market rentals as extrapolated from the EUSILC is multiplied by the corresponding number (stock) of dwellings. For rented dwellings the actual rental is obtained, while for owner-occupied the imputed rental.

For **holiday homes** (houses and apartments), the imputed rental is obtained after multiplying the corresponding number of dwellings by the relevant average market rentals as extrapolated from the EUSILC, but only for the period of a 2-month actual usage of the place. After a consultation with experts on the field and some ad-hoc inquiries, it was decided that the total duration of occupancy for these dwellings could not be greater than 2 months on average per year. The basis for this

reasoning is that these dwellings possibly can be used for some weekends, the public holidays and the summer vacation period.

For **empty dwellings** zero rent is taken, in line with principle 12 of the Commission Regulation so they are not included in the output of dwelling services.

The monthly and annual dwelling services (dwelling stock * average rent) for year 2017 by location and type are shown in the table below:

Table 3.18.5: Dwelling services (monthly), 2017 (€)

	Owned dwellings	Rented dwellings (actual)	Holiday houses & Apartments	Total
Nicosia	43.697.146	8.546.196	5.438.744	57.682.085
Urban	34.083.867	7.687.455	3.359.179	45.130.500
Rural	9.613.279	858.741	2.079.565	12.551.585
Famagusta	4.573.385	921.314	4.013.211	9.507.910
Urban	0	0	0	0
Rural	4.573.385	921.314	4.013.211	9.507.910
Larnaca	14.688.877	2.616.987	4.297.517	21.603.381
Urban	8.681.247	1.814.631	1.462.471	11.958.349
Rural	6.007.629	802.357	2.835.046	9.645.031
Limassol	32.161.424	7.217.256	8.264.260	47.642.939
Urban	23.572.777	5.966.429	2.194.633	31.733.840
Rural	8.588.647	1.250.826	6.069.627	15.909.100
Paphos	9.491.327	2.810.274	7.372.952	19.674.553
Urban	5.662.229	2.257.045	2.934.087	10.853.361
Rural	3.829.098	553.230	4.438.864	8.821.191
Cyprus	104.612.158	22.112.027	29.386.683	156.110.868
Urban	72.000.120	17.725.559	9.950.371	99.676.050
Rural	32.612.038	4.386.468	19.436.312	56.434.818

Table 3.18.6: Dwelling services (annual), 2017 (€ million)

	Owned dwellings	Rented dwellings (actual)	Holiday houses & apartments	Owned + holiday (imputed)	Total (actual + imputed)
Cyprus	1.255,3	265,3	58,8	1.314,1	1.579,5
Urban	864,0	212,7	19,9	883,9	1.096,6
Rural	391,3	52,6	38,9	430,2	482,9

Regarding the rental value of owner-occupied dwellings abroad, this is recorded as import of services, while the rental value of dwellings owned by non-residents is recorded on the exports of services. For more details see chapter 8.

Finally, it should be noted that no cooperative dwellings exist in Cyprus and thus there is no impact in the output.

Extrapolation method

In theory for those years where there is no detailed quantity and/or price information from statistical house surveys, the output of dwelling services is updated using a combined quantity and price projection.

In Cyprus, however, the extrapolation of the housing stock in the benchmark year 2011 is much simpler than the above theory suggests, since the data provided by the annual “Building Permits and Housing Survey” (BPHS) is so detailed that can form the basis of a very sound estimation of the next years’ housing stock.

The extrapolation for year 2017 is based on the Population Census of 2011 and the relevant information from the annual BPHS, which allows the estimation of a cumulative dwelling stock. After the conduct of the 2011 Census, which provided more up-to-date information, the housing stock and consequently the dwelling services were revised.

For the years following the 2011 Census (i.e. 2012 onwards) the dwelling stock is estimated based on the BPHS, by adding the number of newly build dwellings to the existing stock by type of tenure and by deducting the number of reductions of dwellings due to demolitions. Since there is no information on demolitions by type of tenure, it was decided to allocate demolitions solely to owner-occupied dwellings. (In any case annual demolitions constitute only a negligible amount of less than 2% compared to the new dwellings). It should be noted that in the extrapolated method applied for the dwelling stock there is a specific allowance to exclude in each year the newly built empty dwellings from the output.

The accuracy of this method for estimating the dwelling stock is considered as high, since from the analysis of data it became apparent that the number of total dwelling stock for 2011 (431.059 dwellings) was close to the estimate of CYSTAT (421.449 dwellings) for the same year, that was based on the accumulation of stock according to data from the 2001 Census and from the BPHS. The discrepancy was only of 2,3% which is a very slight deviation in statistical terms. It should be noted that a similar difference was observed between the 2001 Census data and the projected value based on the 1992 Census (2,8%), further strengthening the accuracy of the extrapolation method.

The 2021 Census will serve as the basis for the determination of the housing stock for years 2021 onwards and will be checked on whether the extrapolated stock (based on 2011 Census) is similar to the actual Census stock.

For the extrapolation of the average rentals, the basis is the actual rentals from the EUSILC of 2016 as presented above. For the years following 2016, information on the yearly rentals is obtained from the annual EUSILC conducted by CYSTAT. The average rental is calculated for 10 different categories and these rentals serve as an extrapolation index for the estimation of the relevant yearly rentals. The 10 categories applied are as follows:

1. URBAN - Larnaca Houses & Apartments
2. URBAN - Paphos Houses & Apartments
3. URBAN - Nicosia Houses
4. URBAN - Limassol Houses
5. URBAN - Nicosia Apartments rooms 1-4
6. URBAN - Nicosia Apartments rooms 5+
7. URBAN - Limassol Apartments rooms 1-4
8. URBAN - Limassol Apartments rooms 5+
9. RURAL – Houses
10. RURAL - Apartments

This grouping is based on the actual breakdown of the rented dwellings of the 2011 Census, in order to have more or less 10 equal representations of each stratum of dwellings. More specifically, the 50.000+ rented dwellings were equally distributed to these 10 categories and each one has more or less 5.000 observations.

Once the process of the extrapolation of rentals is accomplished, the output of dwelling services can be easily derived.

Intermediate Consumption of dwelling services

According to the Commission Regulation No 1722/2005, expenditure on ordinary maintenance and repairs that an owner-occupier incurs on the decoration, maintenance and repair of the dwelling, not typically carried out by tenants, is treated as intermediate consumption in producing dwelling services. In Cyprus, the Household Budget Survey (HBS) of 2015 is the main source of analytical and comprehensive data of the expenditure of households on the most detailed level available.

Regarding expenditure on repairs and maintenance, major repairs improving the value of the property are allocated to capital formation. Smaller, routine repairs are treated either as private

consumption or intermediate consumption, based on the criteria of the type of repair, its value and whether the expenditure is made by the owner or the tenant. In particular, the HBS reveals information regarding the type of repair, the value and the payment criterion. In order to calculate private consumption, a filter on the data to separate owners from tenants was applied. Expenditure for maintenance and repairs made by the tenant are treated as private consumption. The calculation included extrapolation from the sample to the population based on the 2011 Population Census results.

Table 3.18.7: Maintenance of dwellings, Tenants, 2015

COICOP	Description	Tenants (2015)
04.3	Maintenance and repair of the dwelling	2.893.989
04.3.1	Materials for the maintenance and repair of the dwelling	1.165.708
04.3.2	Services for the maintenance and repair of the dwelling	1.728.281
Other COICOP Codes*		4.675.172
Total		7.569.161

Maintenance and repairs made by the owners were treated separately on the most analytical level available. COICOP code 04.3.1 expenditure was treated as private consumption for amounts equal or less than €2.000 (annually) otherwise as intermediate consumption. The calculation was done on the most detailed COICOP level and then extrapolation on the total population took place. COICOP code 04.3.2 was treated as intermediate consumption or capital formation. The criteria regarding thresholds were empirically set on a 7-digit level, as shown in the table below:

Table 3.18.8: Empirical thresholds for the 7-digit analysis (COICOP 04.3.2)

		Threshold for IC
04.3.2.1	Services of plumbers	100%
04.3.2.2	Services of electricians	100%
04.3.2.3	Maintenance services for heating systems	If amount is less or equal to 3.000 euro
04.3.2.4	Services of painters	100%
04.3.2.5	Services of carpenters	If amount is less or equal to 8.000 euro
04.3.2.9 01	Services of builders	If amount is less or equal to 8.000 euro
04.3.2.9 02	Services of blacksmith	If amount is less or equal to 5.000 euro
04.3.2.9 03	Services of other technicians	100%
04.3.2.9 04	Manufacture of plasterboard	100%
04.3.2.9 05	Replacement of windows / doors and placement of double glasses	If amount is less or equal to 8.000 euro
04.3.2.9 06	Replacement of floor (from wood) or conversion to other kind of floor	If amount is less or equal to 5.000 euro
04.3.2.9 07	Unification of internal area (abolition of walls)	100%
04.3.2.9 08	Paving of the garden / fencing of the dwelling and replacement of the metal rails	If amount is less or equal to 6.000 euro
04.3.2.9 09	Replacement / repair of the roof	If amount is less or equal to 5.000 euro
04.3.2.9 10	Ceiling slab insulation	100%
04.3.2.9 50	Other major repairs	If amount is less or equal to 8.000 euro

Major repairs were chosen to be included as capital formation, i.e. bigger amounts for categories that based on their description fit the definition of improving the value of the property. However, smaller amounts for repairs that are recurring were considered as intermediate consumption.

Table 3.18.9: Maintenance of dwellings, Owners, 2015

COICOP		Owners (2015)
04.3	Maintenance and repair of the dwelling	156.702.652
04.3.1	Materials for the maintenance and repair of the dwelling	16.119.141
04.3.2	Services for the maintenance and repair of the dwelling	140.583.511
Other COICOP Codes*		46.653.724
Total (€)		203.356.376

An assumption was made regarding the expenditure on repairs made by landlords, which was not covered in the Household Budget Survey since the respondents complete the questionnaire by the perspective of either an owner occupier or tenant. Based on the number of tenants that correspond to an equal number of landlords and the distribution of the expenditure of owners, an amount was calculated to be included as intermediate consumption.

As described above, the expenditures typically made by the tenant are recorded as private final consumption and are not part of the intermediate consumption. On the other hand, the expenditures typically made by the owner are considered as intermediate consumption and include the services for the maintenance and repair of the dwelling (i.e. plumbers, electricians, carpenters etc.), the purchase of materials with the intention of undertaking the maintenance or repair themselves and the charges for insurance connected with the dwelling (COICOP code 12.5.2).

Due to the fact that the HBS data for this particular COICOP refers to the premiums, an adjustment is made in order to obtain the service charge attributed to households. This is achieved by using data on insurance Output (premiums earned plus premiums supplements minus claims due minus changes in technical provisions) by sector.

Table 3.18.10: Maintenance of dwellings, Landlords, 2015

COICOP	Description	Landlords (2015)
04.3	Maintenance and repair of the dwelling	24.167.101
04.3.1	Materials for the maintenance and repair of the dwelling	6.846.450
04.3.2	Services for the maintenance and repair of the dwelling	17.320.651
Other COICOP Codes*		-
Total (€)		24.167.101

The expenditure, as calculated in the three tables above, was then attributed to private and intermediate consumption and capital formation as follows:

Table 3.18.11: Analysis of COICOP by type and component

COICOP	Rented	Owned	Landlords	PFC 2015	IC 2015
04.3	2.893.989	156.702.652	24.167.101	14.001.885	139.748.250
04.3.1	1.165.708	16.119.141	6.846.450	12.273.604	6.702.942
04.3.2	1.728.281	140.583.511	17.320.651	1.728.281	133.045.308
Other COICOP	4.675.172	46.653.724	-	4.675.172	46.653.724
Total (€)	7.569.161	203.356.376	24.167.101	18.677.057	186.401.974

Note: Other COICOP codes include: COICOP 04.4.3 (sewage collection), COICOP 04.4.4 (other services relating to the dwelling), COICOP 12.7.04.01 (services of estate agents) and COICOP 21.10.0.09 (Sewerage rates as enforced by the Sewerage Board)

From the above table it is evident that the intermediate consumption for actual rentals (column “landlords”) for 2015 is €24,2 million. The ratio of intermediate consumption to the Output of dwelling services of actual rentals (€226,5 million for 2015) is estimated at 10,7%.

The intermediate consumption for imputed rentals is taken to be the total IC (€186,4 million) minus the respective value for actual rentals (€24,2 million), equal to €162,2 million. The ratio of intermediate consumption to the Output of dwelling services of imputed rentals (€1.319,4 million for 2015) is estimated at 12,3%.

It should be noted that these ratios do not include the relating allocation of FISIM and Insurance.

In order to calculate the intermediate consumption for the reference year 2017 (excl. FISIM and Insurance), these ratios are applied to the output of the dwelling services for actual and imputed rentals. The results are shown in the following table:

Table 3.18.12: Output (market prices) and Intermediate consumption (excl. allocation of FISIM and Insurance), 2017 (€ million)

	Output	Cost/ Output ratio	Intermediate consumption
Imputed rentals	1.314,1	12,3%	161,6
Actual rentals	265,3	10,7%	28,4
Total	1.579,5		190,0

In order to reach the final estimate of dwelling services, adjustments should be made in the figures shown in the table above. These adjustments include the allocation of FISIM and Insurance Output and the adjustment due to net taxes on products.

The calculation of FISIM for dwelling services is based on the stock of loans of households as owners of dwellings. The FISIM due to these housing loans is all added to the intermediate consumption of the imputed rentals and it accounts for €184,4 million for 2017. The allocation of Insurance Output amounting to €16,8 million is based on the premiums paid on housing insurance. For more details, see chapter 3.17.2.

Regarding net taxes on products, since the output of dwelling services is valued at market prices (equal to producers' prices since there is no VAT), an adjustment is made to the data in order to bring it in basic prices. More specifically, in the output of actual rentals, an adjustment of €0,3 million for 2017 is made that represents the taxes on products (tax on rent and stamp duties paid by landlords).

Finally, a SUT balancing adjustment was made for the imputed and actual rentals, affecting the Intermediate Consumption by €37,6 million and €9,7 million respectively. It should be noted that a minor SUT adjustment (€0,8 million) was also made in the IC of the NACE 68.2, other than imputed and actual rentals.

A summary table of the output, intermediate consumption and gross value added for dwelling services, taking into consideration the above-mentioned adjustments, is shown in the table below:

Table 3.18.13: Summary, Dwelling Services, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Imputed rentals	1.314,1	362,9	951,3
Actual rentals	265,0	28,4	236,6
Total Dwelling Services	1.579,1	391,2	1.187,8

A summary with the total adjustment for NACE L (incl. the adjustments for dwelling services) is shown at the end of this section.

Combined data

Business rentals paid to households

Within NACE 68.2, apart from the Dwelling Services an additional sub-category is also included in the renting and operating of own or leased real estate, the "Business rentals paid to households". The necessity of this classification arises for the accounting treatment of rentals received by households.

The estimation method is the following: the total value of *rentals paid by enterprises* and *rentals received by enterprises* is calculated based on information collected from the annual economic surveys and other administrative sources (mainly for NACEs K and O). The net result (rentals paid minus rentals received) is taken to be the output for Business rentals paid to households (actual rentals).

For the estimation of intermediate consumption, the cost/output ratio for actual rentals as described above is taken (10,7%).

Table 3.18.14: Business rentals paid to households, 2017 (€ million)

Rentals paid by enterprises	622,5
Rentals received by enterprises	203,4
Business rentals paid to households (Output)	419,1
Intermediate consumption (excl. FISIM) – 10,7% of output	44,8
Basis for NA figures – Combined data	374,3
Allocation of FISIM	9,8
Gross Value Added	364,5

Exhaustiveness Adjustments to the basis for NA figures

Apart from the conceptual adjustments (see section 3.4) and the Balancing (see chapter 6), the following exhaustiveness adjustments are made:

Adjustment due to wages and salaries in kind (N7)

This exhaustiveness adjustment is performed in order to subtract from the intermediate consumption the value of fuels consumed for the private use of company cars. The calculation method for this income in kind is described in detail in chapter 7.1.3.

A summary of the total adjustments is shown in the table below:

Table 3.18.15: Summary of total adjustments, NACE L, 2017 (€ million)

Type of adjustment	Output	Intermediate consumption	Gross value added
Allocation of FISIM	0,0	197,8	-197,8
Allocation of Insurance Output	0,0	18,8	-18,7
Other Conceptual	-2,0	0,4	-2,4
Holding Gains	-1,6	0,4	-2,0
Net Taxes (D214 minus D31)	-0,4	0,0	-0,4
Exhaustiveness	0,0	-0,2	0,2
Wages and Salaries in kind (N7)	0,0	-0,2	0,2
Balancing	0,0	48,1	-48,1
Total adjustments in NACE L	-2,0	264,8	-266,8

A summary of the Final estimate is presented in the following table:

Table 3.18.16: Summary, NACE Section L, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	2.154,5	288,3	1.866,2
Surveys and censuses	155,9	53,5	102,5
Administrative records	0,0	0,0	0,0
Combined data	419,1	44,8	374,3
Extrapolation and models	1.579,5	190,0	1.389,4
Adjustments	-2,0	264,8	-266,8
Data validation	0,0	0,0	0,0
Allocation of FISIM	0,0	197,8	-197,8
Allocation of Insurance Output	0,0	18,8	-18,7
Other conceptual	-2,0	0,4	-2,4
Exhaustiveness	0,0	-0,2	0,2
Balancing	0,0	48,1	-48,1
Final estimate	2.152,5	553,2	1.599,3

3.19 Professional, scientific and technical activities (NACE Rev.2 Section M)

Table 3.19.1: Description of NACE divisions, Section M

NACE Rev.2	Activity
69-70	Legal and accounting activities - Activities of head offices; management consultancy activities
71	Architectural and engineering services; technical testing and analysis
72	Scientific research and development
73	Advertising and market research
74-75	Other professional, scientific and technical activities - Veterinary activities
M	Professional, scientific and technical activities

The values for output, intermediate consumption and value added by NACE divisions for Professional, Scientific and Technical activities are shown in the table below:

Table 3.19.2: Introductory Table, NACE Section M, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE A	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
69-70	1.894,9	573,1	1.321,9	84,4%	7,5%	6,5%	6,7%
71	156,3	51,4	104,9	6,7%	0,6%	0,5%	0,5%
72	23,4	4,0	19,4	1,2%	0,1%	0,1%	0,1%
73	235,8	174,6	61,2	3,9%	0,3%	0,3%	0,3%
74-75	169,2	110,7	58,5	3,7%	0,3%	0,3%	0,3%
M	2.479,5	913,7	1.565,8	100,0%	8,9%	7,7%	8,0%

From this table it is evident that the dominant activities of NACE M are the “Legal and Accounting activities” (NACE 69) and the “activities of Head Offices; Management Consultancy activities” (NACE 70).

The breakdown by NACE divisions and institutional sectors and the relevant shares are shown in the table below:

Table 3.19.3: NACE Section M by institutional sector, 2017

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
69-70	Output	1.766,6	0,0	0,0	128,4	0,0	1.894,9
	Interm. Consumption	521,8	0,0	0,0	51,2	0,0	573,1
	Gross Value Added	1.244,7	0,0	0,0	77,2	0,0	1.321,9
	% of sector in GVA	94,2%	0,0%	0,0%	5,8%	0,0%	100,0%
71	Output	112,1	0,0	13,0	31,2	0,0	156,3
	Interm. Consumption	39,6	0,0	2,9	8,9	0,0	51,4
	Gross Value Added	72,5	0,0	10,2	22,2	0,0	104,9
	% of sector in GVA	69,1%	0,0%	9,7%	21,2%	0,0%	100,0%
72	Output	0,0	0,0	10,9	0,0	12,4	23,4
	Interm. Consumption	0,0	0,0	2,0	0,0	2,0	4,0
	Gross Value Added	0,0	0,0	9,0	0,0	10,4	19,4
	% of sector in GVA	0,0%	0,0%	46,3%	0,0%	53,7%	100,0%
73	Output	229,2	0,0	0,0	6,6	0,0	235,8
	Interm. Consumption	170,3	0,0	0,0	4,3	0,0	174,6
	Gross Value Added	58,9	0,0	0,0	2,3	0,0	61,2
	% of sector in GVA	96,2%	0,0%	0,0%	3,8%	0,0%	100,0%
74-75	Output	136,7	0,0	15,7	16,8	0,0	169,2
	Interm. Consumption	95,5	0,0	4,2	11,0	0,0	110,7
	Gross Value Added	41,2	0,0	11,5	5,7	0,0	58,5
	% of sector in GVA	70,6%	0,0%	19,6%	9,8%	0,0%	100,0%
M	Output	2.244,5	0,0	39,7	182,9	12,4	2.479,5
	Interm. Consumption	827,2	0,0	9,0	75,4	2,0	913,7
	Gross Value Added	1.417,3	0,0	30,6	107,4	10,4	1.565,8
	% of sector in GVA	90,5%	0,0%	2,0%	6,9%	0,7%	100,0%

Basis for NA figures

Surveys & Censuses

The main data source is the annual economic survey (“Services and Transport Survey”), which produces statistical data related to employment, output, value added, expenses and investments by economic activity based on the Statistical Classification of Economic Activities (NACE Rev.2). The survey of 2017 was conducted through personal interviews. It was carried out on a sampling basis for the enterprises employing less than 20 persons, while it covered all enterprises engaging 20 persons and over. The sample was based on the 2017 Business Register and was selected on a PPS basis (probability proportional to size). It was stratified by employment size group and by NACE. The unit of enumeration was the “enterprise”.

Gross output for professional, scientific and technical activities is calculated as the value of services produced, net receipts from the sale of goods sold in the same condition as purchased and other receipts.

The annual economic surveys do not identify any specialized research laboratories and institutes (market-producers) for NACE 72. The output of the scientific research and development industry is produced only by general government research units (Sector 13) and private non-profit institutions (Sector 15). It is based on the specialized annual research and development survey and it is calculated according to the recommendations of the Task Force on Capitalisation of Research and Development in ESA2010. More information on the approach proposed for measuring the output and the amount capitalised for research and development is available in section 5.10.

Table 3.19.4: Summary, Surveys, NACE Section M, 2017, (€ million)

	69-70	71	72	73	74-75	M
Income from services produced	1.456,9	135,7	8,1	229,8	152,4	1.982,9
+ Sales of goods for resale	0,3	0,5	0,0	0,0	6,3	7,1
+ Income from rentals	5,5	1,6	0,0	0,7	0,0	7,8
+ Income from commission	0,2	0,0	0,0	0,5	0,0	0,7
= Total turnover	1.462,9	137,9	8,1	231,0	158,8	1.998,5
+ Other operating income	4,1	0,8	0,0	0,7	0,1	5,6
+ Change in stocks	-0,7	0,2	0,0	0,0	0,1	-0,4
- Value of goods purchased for resale	0,1	0,4	0,0	0,0	4,6	5,1
= Output	1.466,1	138,5	8,1	231,7	154,4	1.998,7
- Intermediate consumption	527,1	46,2	2,0	168,9	104,6	848,8
= Gross Value Added	939,0	92,3	6,0	62,7	49,8	1.149,9

Intermediate consumption is the sum of direct costs, administrative costs and rentals, which is obtained from the annual economic survey. In the Survey, direct production expenses mainly cover fuels and lubricants, the cost of stationery and other materials, electricity and heating expenses, transport costs as well as repairs and other maintenance expenses. Under this category the payments for services rendered are also included. Administrative expenses include the cost of telephones, postage, legal and accounting services as well as other service costs, such as technical and consultancy services, advertising and entertainment expenses, bank charges etc.

Administrative records

The production of NACE activity 70 is partially covered by administrative records. Specifically, this production refers to enterprises mainly deal with management consultancy activities which are not covered by the annual economic survey.

The source for this part of the activity is the annual financial statements of the enterprises provided by the Central Bank of Cyprus. Relevant data is shown in the table below.

Table 3.19.5: Summary, Administrative records, NACE 70, 2017

		<i>€ million</i>
P1	Output	20,4
P2	Intermediate Consumption	6,2
B1g	Gross Value added	14,2

The Central Government subsector, also contributes to NACE divisions 71, 72, 74 and 75 production. Output is compiled as the sum of costs (i.e. labour cost, intermediate consumption) and is derived from the financial report of the government budget. Intermediate consumption is straight forward as the respective intermediate costs (P2) are taken from the budget.

The production of the Geological Service of the Ministry of Agriculture, Rural Development and the Environment and the production of the State General Laboratory of the Ministry of Health are attributed to NACE 71 as indicated in the table below. The procedure followed for the production of the data is the same followed for the rest of the Central Government subsector as described in section 3.21.

Table 3.19.6: Summary, Administrative records, NACE 71, 2017

		<i>€ million</i>
P1	Output	10,6
P2	Intermediate Consumption	2,9
B1g	Gross Value added	7,7

The production of the Agricultural Research Institute of the Ministry of Agriculture, Natural Resources and Environment and the production of the Cyprus Research Centre of the Ministry of Education and Culture are attributed to NACE 72 as indicated in the table below. The procedure followed for the production of the data is the same followed for the rest of the Central Government subsector as described in section 3.21.

Table 3.19.7: Summary, Administrative records, NACE 72, 2017

		<i>€ million</i>
P1	Output	5,4
P2	Intermediate Consumption	1,1
B1g	Gross Value added	4,3

The production of the Meteorological Service of the Ministry of Agriculture, Rural Development and the Environment is attributed to NACE 74 as indicated in the table below. The procedure followed for the production of the data is the same followed for the rest of the Central Government subsector as described in section 3.21.

Table 3.19.8: Summary, Administrative records, NACE 74, 2017

		<i>€ million</i>
P1	Output	3,3
P2	Intermediate Consumption	0,5
B1g	Gross Value added	2,8

The production of the Veterinary Services of the Ministry of Agriculture, Rural Development and the Environment is attributed to NACE 75 as indicated in the table below. The procedure followed for the production of the data is the same followed for the rest of the Central Government subsector as described in section 3.21.

Table 3.19.9: Summary, Administrative records, NACE 75, 2017

		<i>€ million</i>
P1	Output	12,1
P2	Intermediate Consumption	3,7
B1g	Gross Value added	8,4

Extrapolation and Models

For the case of General Government (NACEs 71, 72, 74 and 75), the estimates of the consumption of fixed capital obtained from the Perpetual Inventory Model (PIM) are included under extrapolation and models data.

Table 3.19.10: Summary, Extrapolation and Models - PIM, NACE 71, 2017

		€ million
P1	Output	2,4
P2	Intermediate Consumption	0,0
B1g	Gross Value added	2,4

Table 3.19.11: Summary, Extrapolation and Models - PIM, NACE 72, 2017

		€ million
P1	Output	4,7
P2	Intermediate Consumption	0,0
B1g	Gross Value added	4,7

Table 3.19.12: Summary, Extrapolation and Models - PIM, NACE 74, 2017

		€ million
P1	Output	0,1
P2	Intermediate Consumption	0,0
B1g	Gross Value added	0,1

Table 3.19.13: Summary, Extrapolation and Models - PIM, NACE 75, 2017

		€ million
P1	Output	0,2
P2	Intermediate Consumption	0,0
B1g	Gross Value added	0,2

Exhaustiveness Adjustments to the basis for NA figures

Apart from the conceptual adjustments (see section 3.4) and the Balancing (see chapter 6), the following exhaustiveness adjustments are made:

Adjustment due to underreporting (N6)

Additionally, for NACE 69.1 (Legal activities) and NACE 69.2 (Accounting, bookkeeping and Auditing services) an underreporting adjustment was made, based on information regarding the exports of services, available from the Balance of Payments compilers of the CBC. For more details, see chapter 7.

Adjustment due to VAT fraud (N6)

VAT fraud (without complicity) represents the adjustment made to the output in the framework of the Supply and Use balancing procedure. For more details, see chapter 7.1.3.

Adjustment due to wages and salaries in kind (N7)

This exhaustiveness adjustment is performed in order to subtract from the intermediate consumption the value of fuels consumed for the private use of company cars. The calculation method for this income in kind is described in detail in chapter 7.1.3.

A summary of the conceptual and exhaustiveness adjustments is shown in the table below:

Table 3.19.14: Summary of total adjustments, NACE M, 2017 (€ million)

Type of adjustment	Output	Intermediate consumption	Gross value added
Allocation of FISIM	0,0	46,9	-46,9
Allocation of Insurance Output	0,0	9,9	-9,9
Other Conceptual	-14,0	-1,1	-12,8
Holding Gains	0,0	0,0	0,0
Net taxes on products	-24,7	0,0	-24,7
R&D	7,2	0,0	7,2
Own-account Production of Software	5,6	0,0	5,6
Relocation to trade	-2,1	-1,1	-1,0
Exhaustiveness	434,8	-1,8	436,6
Underreporting (N6)	348,7	0,0	348,7
VAT Fraud (N6)	86,1	0,0	86,1
Wages and Salaries in kind (N7)	0,0	-1,8	1,8
Balancing	0,9	-3,3	4,2
Total adjustments in NACE M	421,7	50,6	371,1

A summary of the final estimate is presented in the following table:

Table 3.19.15: Summary, NACE Section M, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	2.057,8	863,1	1.194,7
Surveys and censuses	1.998,7	848,8	1.149,9
Administrative records	51,8	14,3	37,4
Combined data	0,0	0,0	0,0
Extrapolation and models	7,4	0,0	7,4
Adjustments	421,7	50,6	371,1
Data validation	0,0	0,0	0,0
Allocation of FISIM	0,0	46,9	-46,9
Allocation of Insurance Output	0,0	9,9	-9,9
Other conceptual	-14,0	-1,1	-12,8
Exhaustiveness	434,8	-1,8	436,6
Balancing	0,9	-3,3	4,2
Final estimate	2.479,5	913,7	1.565,8

3.20 Administrative and support service activities (NACE Rev.2 section N)

Table 3.20.1: Description of NACE divisions, Section N

NACE Rev.2	Activity
77	Rental and leasing activities
78	Employment activities
79	Travel agency, tour operator and other reservation services and related activities
80-82	Security and investigation activities - Services to buildings and landscape activities - Office support and other business support activities
N	Administrative and support service activities

The values for output, intermediate consumption and value added by NACE divisions for Administrative and Support Services activities are shown in the table below:

Table 3.20.2: Introductory Table, NACE Section N, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE N	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
77	160,5	56,3	104,2	31,7%	0,6%	0,5%	0,5%
78	83,2	32,8	50,4	15,4%	0,3%	0,2%	0,3%
79	94,4	31,8	62,6	19,1%	0,4%	0,3%	0,3%
80-82	183,2	72,4	110,8	33,8%	0,6%	0,5%	0,6%
N	521,3	193,4	327,9	100,0%	1,9%	1,6%	1,7%

From this table it is evident that the dominant activities of NACE N are the “Rental and Leasing activities” (NACE 77).

The breakdown by NACE divisions and institutional sectors and the relevant shares are shown in the table below:

Table 3.20.3: NACE Section N by institutional sector, 2017

NACE Rev.2	€ million	S.11	S.12	S.13	S.14	S.15	TOTAL
77	Output	146,4			14,1		160,5
	Interm. Consumption	50,8			5,6		56,3
	Gross Value Added	95,6	0,0	0,0	8,6	0,0	104,2
	% of sector in GVA	91,8%	0,0%	0,0%	8,2%	0,0%	100,0%
78	Output	78,3			4,8		83,2
	Interm. Consumption	30,9			1,9		32,8
	Gross Value Added	47,4	0,0	0,0	2,9	0,0	50,4
	% of sector in GVA	94,1%	0,0%	0,0%	5,9%	0,0%	100,0%
79	Output	79,8			14,6		94,4
	Interm. Consumption	26,9			4,9		31,8
	Gross Value Added	52,9	0,0	0,0	9,7	0,0	62,6
	% of sector in GVA	84,5%	0,0%	0,0%	15,5%	0,0%	100,0%
80-82	Output	160,9			22,3		183,2
	Interm. Consumption	63,0			9,4		72,4
	Gross Value Added	97,9	0,0	0,0	12,9	0,0	110,8
	% of sector in GVA	88,4%	0,0%	0,0%	11,6%	0,0%	100,0%
N	Output	465,5	0,0	0,0	55,8	0,0	521,3
	Interm. Consumption	171,7	0,0	0,0	21,7	0,0	193,4
	Gross Value Added	293,8	0,0	0,0	34,1	0,0	327,9
	% of sector in GVA	89,6%	0,0%	0,0%	10,4%	0,0%	100,0%

Basis for NA figures

Surveys & Censuses

The main data source is the annual economic survey (“Services and Transport Survey”), which produces statistical data related to employment, output, value added, expenses and investments by economic activity based on the Statistical Classification of Economic Activities (NACE Rev.2). The survey of 2017 was conducted through personal interviews. It was carried out on a sampling basis for the enterprises employing less than 20 persons, while it covered all enterprises engaging 20 persons and over. The sample was based on the 2017 Business Register and was selected on a PPS

basis (probability proportional to size). It was stratified by employment size group and by NACE. The unit of enumeration was the “enterprise”.

Gross output for Administrative and Support Service activities is defined as the value of services produced, net receipts from the sale of goods sold in the same condition as purchased and other receipts.

Operational Leasing (NACE 77) is treated as a service. The revenues from this service, measured by the value of rental paid, are treated as output for services. The expenditure on operational leasing is treated either as intermediate consumption or as household final consumption. Only the provision of operating leases is included within this division. Financial leasing, renting of real estate, and renting of equipment with operator are excluded.

The Output of Travel Agency, Tour Operator and Other Reservation Services and Related activities (NACE 79) comprise of revenues from services rendered and other receipts. It should be noted that output for travel agencies is measured as the fees and commission charged, not the full expenditure on tickets or accommodation received. This is because these agencies act as intermediaries between the customer and the suppliers of such services. However, for tour operators, output is the full expenditure made by travellers to the operator.

Table 3.20.4: Summary, Surveys, NACE Section N, 2017 (€ million)

	77	78	79	80-82	N
Income from services produced	125,8	82,9	93,0	181,9	483,6
+ Sales of goods for resale	0,7	15,5	0,0	0,5	16,7
+ Income from rentals	0,2	0,2	0,4	0,4	1,1
+ Income from commission	0,1	0,0	0,1	0,3	0,4
= Total turnover	126,7	98,6	93,5	183,0	501,7
+ Other operating income	0,2	0,0	0,7	0,2	1,1
+ Change in stocks	0,0	0,8	0,0	0,0	0,8
- Value of goods purchased for resale	0,5	11,5	0,0	0,3	12,4
= Output	126,4	87,8	94,2	182,8	491,2
- Intermediate consumption	51,3	34,3	30,2	69,1	184,9
= Gross Value Added	75,1	53,6	64,0	113,7	306,3

Intermediate consumption is the sum of direct costs, administrative costs and rentals, which is obtained from the annual economic survey. In the Survey, direct production expenses mainly cover fuels and lubricants, the cost of stationery and other materials, electricity and heating expenses, transport costs as well as repairs and other maintenance expenses. Under this category the payments for services rendered are also included. Administrative expenses include the cost of telephones, postage, legal and accounting services as well as other service costs, such as technical and consultancy services, advertising and entertainment expenses, bank charges etc. The category rentals refers to rentals paid for buildings and machinery.

Exhaustiveness Adjustments to the basis for NA figures

Apart from the conceptual adjustments (see section 3.4) and the Balancing (see chapter 6), the following exhaustiveness adjustments are made:

Adjustment due to VAT fraud (N6)

VAT fraud (without complicity) represents the adjustment made to the output in the framework of the Supply and Use balancing procedure. For more details, see chapter 7.1.3.

Adjustment due to wages and salaries in kind (N7)

The exhaustiveness adjustment is performed, in order to record imputed rentals for the private use of company cars adding €33,6 million to output. Additionally, an adjustment is carried out in order to subtract from the intermediate consumption the value of fuels consumed for the private use of company cars (€2,3 million). The calculation method for this income in kind is described in detail in chapter 7.1.3.

A summary of the conceptual and exhaustiveness adjustments is shown in the table below:

Table 3.20.5: Summary of conceptual and exhaustiveness adjustments, NACE N, 2017 (€ million)

Type of adjustment	Output	Intermediate consumption	Gross value added
Allocation of FISIM	0,0	11,5	-11,5
Allocation of Insurance Output	0,0	7,1	-7,1
Other Conceptual	-5,1	-2,0	-3,1
Holding Gains	0,0	0,0	0,0
Relocation to trade	-5,1	-2,0	-3,1
Exhaustiveness	35,2	-2,3	37,5
VAT Fraud (N6)	1,5	0,0	1,5
Wages and Salaries in kind (N7)	33,6	-2,3	35,9
Balancing	0,0	-5,8	5,8
Total adjustments in NACE N	30,1	8,5	21,6

A summary of the final estimate is presented in the following table:

Table 3.20.6: Summary, NACE Section N, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	491,2	184,9	306,3
Surveys and censuses	491,2	184,9	306,3
Administrative records	0,0	0,0	0,0
Combined data	0,0	0,0	0,0
Extrapolation and models	0,0	0,0	0,0
Adjustments	30,1	8,5	21,6
Data validation	0,0	0,0	0,0
Allocation of FISIM	0,0	11,5	-11,5
Allocation of Insurance Output	0,0	7,1	-7,1
Other conceptual	-5,1	-2,0	-3,1
Exhaustiveness	35,2	-2,3	37,5
Balancing	0,0	-5,8	5,8
Final estimate	521,3	193,4	327,9

3.21 Public administration and defence; compulsory social security (NACE Rev.2 Section O)

The values for output, intermediate consumption and value added for NACE O are shown in the table below:

Table 3.21.1: Introductory Table, NACE Section O, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE O	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
84	1.987,9	430,7	1.557,2	100,0%	8,8%	7,7%	7,8%
O	1.987,9	430,7	1.557,2	100,0%	8,8%	7,7%	7,8%

The breakdown by NACE divisions and institutional sectors and the relevant shares are shown in the table below:

Table 3.21.2: NACE Section O by institutional sector, 2017

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
84	Output			1.987,9			1.987,9
	Interm. Consumption			430,7			430,7
	Gross Value Added	0,0	0,0	1.557,2	0,0	0,0	1.557,2
	% of sector in GVA	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%
O	Output	0,0	0,0	1.987,9	0,0	0,0	1.987,9
	Interm. Consumption	0,0	0,0	430,7	0,0	0,0	430,7
	Gross Value Added	0,0	0,0	1.557,2	0,0	0,0	1.557,2
	% of sector in GVA	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%

Basis for NA figures

Administrative records

The output of NACE 84 is comprised of the central government output, which includes government ministries, departments, extra-budgetary funds as well as semi-government (public) organisations; the local authorities output and the output of social security funds.

Data for the assessment of general government output is provided to CYSTAT by the National Treasury of the Republic.

Data concerning government ministries, departments, extra-budgetary funds and the social security funds are provided through the Treasury's online accounting database system, FIMAS (Financial Information Management Accounting System). FIMAS contains all revenue and expenditure transactions concerning these bodies in great detail (including all flows to other subsectors and bodies).

Data concerning semi-government organisations (included in the central government subsector) and local government are also provided through the National Treasury, which collects information on a monthly basis and transmits it to CYSTAT shortly after the reference period (usually within 20 days after the end of every month).

The general government output concerning NACE 84 for 2017 is comprised of the central government output by 86%, the local government output by 13% and the social security funds by 1%.

Central Government

The central government subsector (as defined in ESA 2010) is split among several NACE codes (please see chapter 9 for a detailed allocation of NACE to all central government departments/units). The majority although of these units is classified under NACE 84. The data concerning the output of units/organisations/departments that belongs to the central government subsector but are classified under other NACE codes are presented within their respective NACE category.

Eight semi-government (public) organisations (out of a total of 27 which are included in the central government) are classified under NACE 84. These organisations are:

- Cyprus Sports Organisation
- Cyprus Tourism Organisation
- Investment Promotion Agency
- Research Promotion Foundation
- Agricultural Payments Organisation
- Cyprus Organisation for Storage and Management of Oil Stocks
- School Committees
- Cyprus National Addictions Authority

The central government output of NACE 84 is considered non-market. It is calculated by adding together the employees' remuneration, the taxes on production (less other subsidies received),

depreciation and intermediate consumption of all bodies within the central government that are classified under NACE 84.

The majority of the data (all except depreciation and FISIM) for the government departments and extra-budgetary funds is collected on a monthly basis through FIMAS. It refers to all the revenue and expenditure transactions carried out throughout the reference month. The Government Finance Statistics section monitors the FIMAS budget codes on a monthly basis and classifies them according to the ESA 2010 classification system. The budget codes are also classified according to NACE and COFOG and any new budget codes that arise are investigated and classified accordingly.

Data concerning the semi-government organisations are collected by the National Treasury of the Republic from these organisations on a monthly basis. The Treasury tabulates the data and transmits the tables to CYPSTAT after the end of the reference month.

In 2017, the output value of central government amounted to €1.436,8 million and after the deduction of intermediate consumption amount to €348,9 million, this results in €1.087,9 million of gross value added.

Table 3.21.3: Central Government, Summary, Administrative records, NACE 84, 2017 (€ million)

P1	Output	1.436,8
<i>P11+P12</i>	<i>Market</i>	<i>0,0</i>
P13	<i>Non-market</i>	<i>1.436,8</i>
P131	Payments	0,0
P132	Other non-market	0,0
<i>P11+P12+P131</i>	<i>Market + Payments</i>	<i>0,0</i>
P2	Intermediate Consumption	348,9
B1g	Gross Value added	1.087,9
D1	Compensation of employees	1.087,9

Compensation of employees concerns all the salaries and wages of all staff employed by the civil service and semi-government organisations (full-time, part-time, permanent, seasonal, monthly, hourly staff) as well as the employer's social contributions (actual and imputed). Other taxes on production are not paid by the central government in Cyprus.

All government purchases of goods and services for the regular production of non-market output are recorded as intermediate consumption. These purchases relate to items required for official business, such as office materials, books and journals and to official expenditure on postage, telephone calls, consumables, rentals, vehicle running costs, the management and maintenance of

land and buildings etc., purchases of machinery, furnishings and equipment other than capital goods and the cost of official travel and various services, including legal and consultancy fees.

Social Security Funds

The data that concerns the transactions of the Social Security funds is covered in FIMAS; hence the procedure followed is identical to that followed for the central government departments.

Table 3.21.4: Social Security Funds, Summary, Administrative records, NACE 84, 2017 (€ million)

P1	Output	14,1
<i>P11+P12</i>	<i>Market</i>	<i>0,0</i>
P13	<i>Non-market</i>	<i>14,1</i>
P131	Payments	0,0
P132	Other non-market	0,0
<i>P11+P12+P131</i>	<i>Market + Payments</i>	<i>0,0</i>
P2	Intermediate Consumption	5,6
B1g	Gross Value added	8,5
D1	Compensation of employees	8,5

Local Authorities

In Cyprus **the** sub-sector of Local Government consists of 39 municipalities and 349 community boards. Data on the local authorities are collected by the National Treasury on a monthly basis, which then tabulates the data and transmits it to CYPSTAT.

A cross-check procedure is also performed as regards transfers from the budget to local authorities with the use of FIMAS. This is very useful for consolidation purposes.

Table 3.21.5: Local Authorities, Summary, Administrative records, NACE 84, 2017 (€ million)

P1	Output	237,6
<i>P11+P12</i>	<i>Market</i>	<i>51,9</i>
P13	<i>Non-market</i>	<i>185,7</i>
P131	Payments	50,7
P132	Other non-market	135,0
<i>P11+P12</i>	<i>Market + Payments</i>	<i>103,4</i>
P2	Intermediate Consumption	84,5
B1g	Gross Value added	153,1
D1	Compensation of employees	123,4

Extrapolation and models

For the case of General Government, under extrapolation and models are included the estimates of the consumption of fixed capital obtained from the Perpetual Inventory Model (PIM) (see the relevant chapter 4.12).

A summary of the Final estimate is presented in the following table:

Table 3.21.6: Summary, NACE Section O, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	1.996,3	439,1	1.557,2
Surveys and censuses	0,0	0,0	0,0
Administrative records	1.688,5	439,1	1.249,5
Combined data	0,0	0,0	0,0
Extrapolation and models	307,8	0,0	307,8
Adjustments	-8,4	-8,4	0,0
Data validation	0,0	0,0	0,0
Allocation of FISIM	-8,3	-8,3	0,0
Allocation of Insurance Output	0,8	0,8	0,0
Other conceptual	0,0	0,0	0,0
Exhaustiveness	0,0	0,0	0,0
Balancing	-0,9	-0,9	0,0
Final estimate	1.987,9	430,7	1.557,2

3.22 Education (NACE Rev.2 Section P)

The value added of the Education Section is 6,1% of total economy value added. Output, Intermediate consumption and value added for the Section is provided in the table below:

Table 3.22.1: Introductory Table, NACE Section P, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE P	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
85	1.322,3	244,8	1.077,5	100,0%	6,1%	5,3%	5,5%
P	1.322,3	244,8	1.077,5	100,0%	6,1%	5,3%	5,5%

A breakdown of NACE 85 into sectors is provided in the table following. Note that a significant portion of total NACE 85 output is non-market and belongs to sectors S13 and S15.

Table 3.22.2: NACE Section P by institutional sector, 2017

NACE Rev.2	€ million	S.11	S.12	S.13	S.14	S.15	TOTAL
85	Output	256,0	0,0	824,9	239,1	2,2	1.322,3
	Interm. Consumption	87,1	0,0	71,0	86,1	0,6	244,8
	Gross Value Added	168,9	0,0	753,9	153,0	1,6	1.077,5
	% of sector in GVA	15,7%	0,0%	70,0%	14,2%	0,2%	100,0%
P	Output	256,0	0,0	824,9	239,1	2,2	1.322,3
	Interm. Consumption	87,1	0,0	71,0	86,1	0,6	244,8
	Gross Value Added	168,9	0,0	753,9	153,0	1,6	1.077,5
	% of sector in GVA	15,7%	0,0%	70,0%	14,2%	0,2%	100,0%

Basis for NA Figures

Surveys and Censuses

The main data source for private education (Sectors S11, S14, S15), is the annual economic survey ("Services and Transport Survey"), which produces statistical data related to employment, output, value added, expenses and investments by economic activity based on the Statistical Classification of

Economic Activities (NACE Rev.2). The survey of 2017 was conducted through personal interviews. It was carried out on a sampling basis for the enterprises employing less than 20 persons, while it covered all enterprises engaging 20 persons and over. The sample was based on the 2017 Business Register and was selected on a PPS basis (probability proportional to size). It was stratified by employment size group and by NACE. The unit of enumeration was the “enterprise”.

Output of the education section (Sectors S11 and S14) is defined as the value of services produced, net receipts from resale of goods and other receipts. Output for the non-market private sector (NPISH Sector-S15) is calculated as the sum of costs. The analytical calculation of output is provided below:

Table 3.22.3: Output, NACE Section P (surveys), 2017 (€ million)

	Income from services produced	384,5
	+ Sales of goods for resale	2,7
	+ Income from rentals	2,4
	+ Income from commission	0,0
	= Total turnover	389,5
	+ Other operating income	2,5
	+ Change in stocks	0,1
	- Value of goods purchased for resale	2,2
P.1	Output (S11/S14)	389,9
P.2	Intermediate consumption	0,5
D.1	Compensation of employees	1,5
D.29	Other taxes on production	0,0
P.51c	Capital Consumption	0,1
P.1	Output (S15)	2,2
	Total output (Surveys)	392,0

Intermediate consumption is the sum of direct costs, administrative costs and rentals, which is obtained from the annual economic survey. In the Survey, direct production expenses mainly cover the cost of stationery and other materials, electricity and heating expenses, transport costs as well as repairs and other maintenance expenses. Under this category the payments for services rendered are also included. Administrative expenses include the cost of telephones, postage, legal and accounting services as well as other service costs, such as technical and consultancy services, advertising and entertainment expenses, bank charges etc.

Table 3.22.4: Intermediate Consumption, NACE Section P (surveys), 2017 (€ million)

<i>Direct costs</i>	59,0
<i>+Administrative costs</i>	57,4
<i>+Rentals</i>	26,1
Intermediate consumption	142,5

Administrative records

Public education is entirely non-market and it is classified to the General Government Sector (S13). The main source for the public education is the financial report of the government budget and the financial statements of the public universities.

Among the government departments that are classified under NACE Division 85 is the Ministry of Education, Culture, Sport and Youth and other public schools managed by other Ministries, such as the Cyprus Higher Hotel Institute, the Productivity Centre, the Police Academy, the Forestry College, the Academy of Public Administration and the Pedagogical Institute. Three public universities (semi government organisations), namely the University of Cyprus, the Cyprus University of Technology and the Open University of Cyprus, are classified as non-market based on the quantitative market/non-market 50% criterion and are also classified under the General government sector.

Output for the public education sector is compiled as the sum of costs i.e. (labour cost, intermediate consumption). **Intermediate consumption** is straight forward; the respective intermediate costs. For more information, see section 3.21.

The data for 2017 is summarised in the following table.

Table 3.22.5: NACE P (General Government), 2017 (€ million)

P2	Intermediate inputs	71,0
D1	Compensation of employees	696,7
P1	Output (baseline statistics)	767,8
B1g	Gross Value Added	696,7

Extrapolation and Models

For the case of General Government (NACE 85), the estimates of the consumption of fixed capital obtained from the Perpetual Inventory Model (PIM) are included under extrapolation and models data.

Table 3.22.6: Summary, Extrapolation and Models, NACE P, 2017 (€ million)

P1	Output	57,2
P2	Intermediate Consumption	0
B1g	Gross Value added	57,2

Exhaustiveness Adjustments to the basis for NA figures

Apart from the conceptual adjustments (see section 3.4) and the Balancing (see chapter 6), the following exhaustiveness adjustments are made:

Adjustment due to not registering-underground activity (N1)

Adjustments are made in the national accounts' framework, in order to cover some underground activities, such as gymnastics and sport instruction (personal trainers), as well as dance and music instruction (i.e. private piano lessons). This explicit exhaustiveness adjustment was based on the SUT balancing procedure findings of previous years. For more information, see chapter 7.

Adjustment due to misreporting (N6)

Adjustments are made in the national accounts framework, in particular for misreporting for "private tuition". From the comparison of the results of the Household Expenditure survey, it was evident that a significant mis-reporting existed in the domain of after-school tuition (NACE 85.59.6). This activity is normally undertaken on a part-time basis by teachers/professors who give private tuition at home. Since these cash receipts do not appear in the administrative or survey data and, consequently, in the production statistics, adjustments are made by the national accounts. For more information, see chapter 7.

A summary of total adjustments for NACE Section P is provided in the table below:

Table 3.22.7: Summary of total adjustments, NACE Section P, 2017 (€ million)

Description of activity	Output	Intermediate consumption	Gross value added
Allocation of FISIM	0,0	9,1	-9,1
Allocation of Insurance Output	0,0	1,9	-1,9
Other Conceptual:	9,4	-0,2	9,6
R&D	10,0	0,0	10,0
Holding Gains	0,0	0,0	0,0
Relocation to trade	-0,6	-0,2	-0,4
Exhaustiveness adjustments	91,9	14,6	77,3
Not registering-underground(N1)	40,0	14,6	25,4
Misreporting(N6)	51,9	0,0	51,9
Balancing	4,0	5,9	-1,9
Total Adjustments	105,3	31,3	74,1

A summary for NACE Section P is provided below:

Table 3.22.8: Summary, NACE Section P, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	1.216,9	213,5	1.003,4
Surveys and censuses	392,0	142,5	249,5
Administrative records	767,8	71,0	696,7
Combined data	0,0	0,0	0,0
Extrapolation and models	57,2	0,0	57,2
Adjustments	105,3	31,3	74,1
Data validation	0,0	0,0	0,0
Allocation of FISIM	0,0	9,1	-9,1
Allocation of Insurance Output	0,0	1,9	-1,9
Other conceptual	9,4	-0,2	9,6
Exhaustiveness	91,9	14,6	77,3
Balancing	4,0	5,9	-1,9
Final estimate	1.322,3	244,8	1.077,5

3.23 Human Health and Social Work Activities (NACE Rev.2 Section Q)

Table 3.23.1: Description of NACE divisions, Section Q

NACE Rev.2	Activity
86	Human health activities
87-88	Social work activities
Q	Human health and social work activities

The main variables in the section of Human Health and Social Work Activities are shown below:

Table 3.23.2: Introductory Table, NACE Section Q, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE Q	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
86	988,0	368,6	619,4	89,4%	3,5%	3,1%	3,2%
87-88	117,8	44,3	73,5	10,6%	0,4%	0,4%	0,4%
Q	1.105,8	412,9	692,9	100,0%	3,9%	3,4%	3,5%

A breakdown of NACE Q by NACE and institutional sectors and the relevant shares is provided in the table below:

Table 3.23.3: NACE Section Q by institutional sector, 2017

NACE Rev.2	€ million	S.11	S.12	S.13	S.14	S.15	TOTAL
86	Output	185,6		444,9	336,3	21,1	988,0
	Interm. Consumption	88,0		164,8	110,1	5,7	368,6
	Gross Value Added	97,6	0,0	280,1	226,3	15,4	619,4
	% of sector in GVA	15,8%	0,0%	45,2%	36,5%	2,5%	100,0%
87-88	Output	25,8		26,4	1,0	64,6	117,8
	Interm. Consumption	10,0		3,1	0,6	30,6	44,3
	Gross Value Added	15,7	0,0	23,3	0,4	34,0	73,5
	% of sector in GVA	21,4%	0,0%	31,7%	0,6%	46,3%	100,0%
Q	Output	211,4	0,0	471,3	337,3	85,8	1.105,8
	Interm. Consumption	98,0	0,0	167,9	110,6	36,3	412,9
	Gross Value Added	113,3	0,0	303,4	226,7	49,5	692,9
	% of sector in GVA	16,4%	0,0%	43,8%	32,7%	7,1%	100,0%

Basis for NA Figures

Surveys and Censuses

The main data source for private Health (S11, S14, and S15) is the annual economic survey (“Services and Transport Survey”), which produces statistical data related to employment, output, value added, expenses and investments by economic activity based on the Statistical Classification of Economic Activities (NACE Rev.2). The survey of 2017 was conducted through personal interviews. It was carried out on a sampling basis for the enterprises employing less than 20 persons, while it covered all enterprises engaging 20 persons and over. The sample was based on the 2017 Business Register and was selected on a PPS basis (probability proportional to size). It was stratified by employment size group and by NACE. The unit of enumeration was the “enterprise”.

Output for private health (sectors S11/S14) is defined as the value of services produced, net receipts from resale of goods and other receipts, as described in the table below. The Output for the non-profit institutions that are classified in NACE Q is estimated by summing costs (intermediate consumption, compensation of employees, other taxes on production and consumption of fixed capital), using information from the survey questionnaires. For more information on the calculation of output for the NPISH Sector see section 3.1.

Table 3.23.4: Output, NACE Section Q (surveys), 2017 (€ million)

		86	87-88	Q
	Income from services produced	414,1	26,1	440,2
	+ Sales of goods for resale	0,0	0,0	0,0
	+ Income from rentals	1,9	0,5	2,3
	+ Income from commission	0,0	0,0	0,0
	= Total turnover	415,9	26,6	442,5
	+ Other operating income	1,4	0,2	1,6
	+ Change in stocks	0,0	0,0	0,0
	- Value of goods purchased for resale	0,0	0,0	0,0
P.1	Output (S11/S14)	417,3	26,8	444,1
P.2	Intermediate consumption	5,3	29,7	34,9
D.1	Compensation of employees	11,3	32,2	43,5
D.29	Other taxes on production	0,0	0,1	0,1
P.51c	Capital Consumption	4,1	1,7	5,8
P.1	Output (S15)	20,7	63,7	84,4
P.11	Market Output	0,0	8,9	8,9
P.12	Output for own final use	5,1	0,0	5,1
P.13	Other non-market output	15,6	54,8	70,3
	Total output (Surveys)	438,0	90,5	528,5

Intermediate consumption is the sum of direct costs, administrative costs and rentals, which is obtained from the annual economic survey. In the Survey, direct production expenses mainly cover fuels and lubricants, the cost of stationery and other materials, electricity and heating expenses, transport costs as well as repairs and other maintenance expenses. Under this category the payments for services rendered are also included. Administrative expenses include the cost of telephones, postage, legal and accounting services as well as other service costs, such as technical and consultancy services, advertising and entertainment expenses, bank charges etc.

The intermediate consumption for NACE Section Q is structured as follows:

Table 3.23.5: Intermediate Consumption, NACE Section Q (surveys), 2017 (€ million)

	86	87-88	Q
Direct costs	133,5	34,9	168,4
+Administrative costs	17,7	2,9	20,6
+Rentals	22,2	2,1	24,3
Intermediate consumption	173,3	40,0	213,3

Administrative records

The output for public health (i.e. public hospitals) is classified in the General Government Sector and is based on administrative records. The valuation for non-market producers has a similar treatment with the one described for “Public Administration and Defence” (see 3.21 above). **Output** is compiled as the sum of costs (i.e. labour cost, intermediate consumption) and it is derived from the financial report of the government budget. **Intermediate consumption** is straight forward; the respective intermediate costs (P2) are taken from the budget.

Table 3.23.6: NACE Q (general government), 2017 (€ million)

P2	Intermediate inputs	167,9
D1	Compensation of employees	299,6
P1	Output (baseline figure)	467,5
B1g	Gross Value Added	299,6

Extrapolation and models

For the case of General Government (NACEs 86, 87, 88), the estimates of the consumption of fixed capital obtained from the Perpetual Inventory Model (PIM) are included under extrapolation and models data.

Table 3.23.7: Summary, Extrapolation and Models - PIM, NACE 86, 2017 (€ million)

P1	Output	3,6
P2	Intermediate Consumption	0
B1g	Gross Value added	3,6

Table 3.23.8: Summary, Extrapolation and Models - PIM, NACE 87, 2017 (€ million)

P1	Output	0,0
P2	Intermediate Consumption	0
B1g	Gross Value added	0,0

Table 3.23.9: Summary, Extrapolation and Models - PIM, NACE 88, 2017 (€ million)

P1	Output	0,2
P2	Intermediate Consumption	0
B1g	Gross Value added	0,2

Exhaustiveness Adjustments to the basis for NA figures

Apart from the conceptual adjustments (see section 3.4) and the Balancing (see chapter 6), the following exhaustiveness adjustments are made:

Adjustment due to misreporting (N6)

Adjustments are made in NACE Q, for misreporting of revenue by private doctors, dentists and private hospitals. Compilation of data in these activities, assumes that the survey questionnaires are completed in the same way as the tax declaration. Consequently, a supplementary estimate is specifically made for output. Taking into account the above reasoning, the survey results are provided with an adjustment for concealed production. The corrected survey results are also confronted with expenditure on medical services from the Household Budget Survey and an additional adjustment is made. For more information, see chapter 7.

Adjustment due to wages and salaries in kind (N7)

This exhaustiveness adjustment is performed in order to subtract from the intermediate consumption the value of fuels consumed for the private use of company cars. The calculation method for this income in kind is described in detail in chapter 7.1.3.

A summary of the adjustments for NACE Section Q is described in the table below:

Table 3.23.10: Summary of total adjustments, NACE Section Q, 2017 (€ million)

Description of activity	Output	Intermediate consumption	Gross value added
Allocation of FISIM	1,3	11,6	-10,4
Allocation of Insurance Output	0,1	3,1	-3,0
Other Conceptual	4,2	0,0	4,2
R&D	4,0	0,0	4,0
Holding Gains	0,0	0,0	0,0
Net taxes on products	0,2	0,0	0,2
Exhaustiveness adjustments	76,3	-0,3	76,7
Misreporting- surveys (N6)	9,9	0,0	9,9
Misreporting- HBS (N6)	66,4	0,0	66,4
Wages and salaries in kind (fuels) (N7)	0,0	-0,3	0,3
Balancing	24,1	17,3	6,8
Total Adjustments	106,0	31,7	74,3

A summary for NACE Section Q is provided in the table below:

Table 3.23.11: Summary, NACE Section Q, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	999,8	381,2	618,6
Surveys and censuses	528,5	213,3	315,2
Administrative records	467,5	167,9	299,6
Combined data	0,0	0,0	0,0
Extrapolation and models	3,8	0,0	3,8
Adjustments	106,0	31,7	74,3
Data validation	0,0	0,0	0,0
Allocation of FISIM	1,3	11,6	-10,4
Allocation of Insurance Output	0,1	3,1	-3,0
Other conceptual	4,2	0,0	4,2
Exhaustiveness	76,3	-0,3	76,7
Balancing	24,1	17,3	6,8
Final estimate	1.105,8	412,9	692,9

3.24 Arts, entertainment and recreation (NACE Rev.2 Section R)

Table 3.24.1: Description of NACE divisions, Section R

NACE Rev.2	Activity
90-92	Creative, arts and entertainment activities; Libraries, archives, museums and other cultural activities; Gambling and betting activities
93	Sports activities and amusement and recreation activities
R	Arts, entertainment and recreation

A table with the value of output, intermediate consumption, value added and the relevant shares by NACE Division for NACE R is provided below:

Table 3.24.2: Introductory Table, NACE Section R, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE R	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
90-92	257,3	82,8	174,5	60,6%	1,0%	0,9%	0,9%
93	218,1	104,6	113,5	39,4%	0,6%	0,6%	0,6%
R	475,4	187,4	288,0	100,0%	1,6%	1,4%	1,5%

The breakdown by NACE divisions and institutional sectors and the relevant shares are shown in the table below:

Table 3.24.3: NACE Section R by institutional sector, 2017

NACE Rev.2	(€ million)	S.11	S.12	S.13	S.14	S.15	TOTAL
90-92	Output	219,7		22,1	7,6	8,0	257,3
	Interm. Consumption	70,9		4,5	3,8	3,6	82,8
	Gross Value Added	148,8	0,0	17,5	3,8	4,4	174,5
	% of sector in GVA	85,3%	0,0%	10,0%	2,2%	2,5%	100,0%
93	Output	146,8		0,0	24,5	46,8	218,1
	Interm. Consumption	71,5		0,0	7,8	25,3	104,6
	Gross Value Added	75,3	0,0	0,0	16,7	21,5	113,5
	% of sector in GVA	66,3%	0,0%	0,0%	14,7%	18,9%	100,0%
R	Output	366,5	0,0	22,1	32,2	54,7	475,4
	Interm. Consumption	142,4	0,0	4,5	11,6	28,9	187,4
	Gross Value Added	224,1	0,0	17,5	20,5	25,9	288,0
	% of sector in GVA	77,8%	0,0%	6,1%	7,1%	9,0%	100,0%

Basis for NA Figures**Surveys and censuses**

The main data source for the market producers (the combined S.11/S.14 sector) as well as those for the private non-market producers (S15 sector) is the annual economic survey (“Services and Transport Survey”). The survey results produced statistical data related to employment, output, value added, expenses and investments by economic activity based on the Statistical Classification of Economic Activities (NACE Rev.2). The survey of 2017 was conducted through personal interviews. It was carried out on a sampling basis for the enterprises employing less than 20 persons, while it covered all enterprises engaging 20 persons and over. The sample was based on the 2017 Business Register and was selected on a PPS basis (probability proportional to size). It was stratified by employment size group and by NACE. The unit of enumeration was the “enterprise”.

Output is defined as the value of services produced, net receipts from resale of goods and other receipts, as described in the table below. Output for the non-profit institutions (NPISH) that are classified in NACE R is estimated by summing costs (intermediate consumption, compensation of employees, other taxes on production and consumption of fixed capital), using information from the survey questionnaires. For more information on the calculation of output for the NPISH Sector see section 3.1.

Table 3.24.4: Output, NACE Section R (surveys), 2017 (€ million)

		90-92	93	R
	Income from services produced	141,3	137,1	278,4
	+ Sales of goods for resale	0,2	2,7	2,9
	+ Income from rentals	0,5	1,6	2,1
	+ Income from commission	0,1	9,9	9,9
	= Total turnover	142,0	151,2	293,2
	+ Other operating income	1,5	0,5	2,0
	+ Change in stocks	0,0	0,1	0,1
	- Value of goods purchased for resale	0,1	1,9	2,0
P.1	Output (S11/S14)	143,4	149,9	293,3
P.2	Intermediate consumption	3,3	24,6	27,9
D.1	Compensation of employees	3,3	19,8	23,0
D.29	Other taxes on production	0,1	0,3	0,4
P.51c	Capital Consumption	1,1	1,4	2,5
P.1	Output (S15)	7,7	46,1	53,8
<i>P.11</i>	<i>Market Output</i>	<i>0,2</i>	<i>19,5</i>	19,7
<i>P.12</i>	<i>Output for own final use</i>	<i>0,0</i>	<i>0,0</i>	0,0
<i>P.13</i>	<i>Other non-market output</i>	<i>7,5</i>	<i>26,6</i>	34,1
	Total output (Surveys)	151,2	196,0	347,1

Intermediate consumption is the sum of direct costs, administrative costs and rentals, which is obtained from the annual economic survey. In the Survey, direct production expenses mainly cover fuels and lubricants, the cost of stationery and other materials, electricity and heating expenses, transport costs as well as repairs and other maintenance expenses. Under this category the payments for services rendered are also included. Administrative expenses include the cost of telephones, postage, legal and accounting services as well as other service costs, such as technical and consultancy services, advertising and entertainment expenses, bank charges etc.

Table 3.24.5: Intermediate Consumption, NACE R (surveys), 2017 (€ million)

	90-92	93	R
Direct costs	57,8	70,3	128,1
Administrative costs	13,5	20,6	34,2
Rentals	4,7	8,9	13,6
Intermediate consumption	76,0	99,8	175,8

Administrative records

Government departments and semi-government organisations are classified as non-market producers based on ESA2010 qualitative criteria and are included in the General Government Sector of NACE R (e.g. Public Libraries, Public museums, Cyprus Theatre Organisation). Similar to other activities, the data for the General Government Sector is based on administrative records.

Output is compiled as the sum of costs (compensation of employees, intermediate consumption) and it is derived from the financial report of the government budget. Intermediate consumption is straight forward; the respective intermediate costs (P2) are taken from the budget. For more information, see section 3.21.

The General Government part of NACE R is summarised in the table below:

Table 3.24.6: NACE R (general government), 2017 (€ million)

P2	Intermediate inputs	4,5
D1	Compensation of employees	15,7
P1	Output (baseline figure)	20,3
B1g	Gross Value Added	15,7

Extrapolation and models

For the case of General Government (NACEs 90, 91), the estimates of the consumption of fixed capital obtained from the Perpetual Inventory Model (PIM) are included under extrapolation and models data.

Table 3.24.7: Summary, Extrapolation and Models, NACE 90, 2017 (€ million)

P1	Output	0,01
P2	Intermediate Consumption	0,00
B1g	Gross Value added	0,01

Table 3.24.8: Summary, Extrapolation and Models, NACE 91, 2017 (€ million)

P1	Output	1,8
P2	Intermediate Consumption	0
B1g	Gross Value added	1,8

Exhaustiveness Adjustments to the basis for NA figures

Apart from the conceptual adjustments (see section 3.4) and the Balancing (see chapter 6), the following exhaustiveness adjustments are made:

Adjustment due to misreporting (N6)

Gabbling and betting activities (NACE 92) and horse betting activities (NACE 93) are believed to be underreported and therefore, an adjustment is made based on ad-hoc survey. For more information, see chapter 7.

Adjustment due to VAT fraud (N6)

VAT fraud (without complicity) represents the adjustment made to the output in the framework of the Supply and Use balancing procedure. For more details, see chapter 7.1.3.

A summary of the adjustments for NACE Section R is described in the table below:

Table 3.24.9: Summary of total adjustments, NACE R, 2017 (€ million)

Description of activity	Output	Intermediate consumption	Gross value added
Allocation of FISIM	0,8	7,7	-6,8
Allocation of Insurance Output	0,1	1,8	-1,7
Other Conceptual	-10,3	-0,4	-9,9
Holding Gains	0,2	-0,1	0,2
Net taxes on products	-9,7	0,0	-9,7
Relocation to trade	-0,8	-0,4	-0,4
Exhaustiveness adjustments	115,6	0,0	115,6
Underreporting-Gabbling (N6)	90,9	0,0	90,9
Underreporting-Horsebetting (N6)	20,1	0,0	20,1
VAT fraud (N6)	4,6	0,0	4,6
Balancing	0,0	-2,0	2,0
Total Adjustments	106,3	7,1	99,2

The results for NACE Section R can be summed up as follows:

Table 3.24.10: Summary, NACE Section R, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	369,2	180,4	188,8
Surveys and censuses	347,1	175,8	171,3
Administrative records	20,3	4,5	15,7
Combined data	0,0	0,0	0,0
Extrapolation and models	1,8	0,0	1,8
Adjustments	106,3	7,1	99,2
Data validation	0,0	0,0	0,0
Allocation of FISIM	0,8	7,7	-6,8
Allocation of Insurance Output	0,0	1,8	-1,7
Other conceptual	-10,3	-0,4	-9,9
Exhaustiveness	115,6	0,0	115,6
Balancing	0,0	-2,0	2,0
Final estimate	475,4	187,4	288,0

3.25 Other Service Activities (NACE Rev.2 Section S)

Table 3.25.1: Description of NACE divisions, Section S

NACE Rev.2	Activity
94	Activities of membership organisations
95	Repair of computers and personal and household goods
96	Other personal service activities
S	Other service activities

A summary table with the value of output, intermediate consumption, and value added by NACE Division is provided below:

Table 3.25.2: Introductory Table, NACE Section S, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE S	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
94	133,1	52,2	80,9	28,1%	0,5%	0,4%	0,4%
95	16,7	7,9	8,8	3,1%	0,0%	0,0%	0,0%
96	271,8	73,9	197,9	68,8%	1,1%	1,0%	1,0%
S	421,6	134,0	287,6	100,0%	1,6%	1,4%	1,5%

The breakdown by NACE Division and institutional sectors and the relevant shares are shown in the table below:

Table 3.25.3: NACE Section S by institutional sector, 2017

NACE Rev.2	€ million	S.11	S.12	S.13	S.14	S.15	TOTAL
94	Output	19,3		1,8		111,9	133,1
	Interm. Consumption	7,3		0,5		44,3	52,2
	Gross Value Added	12,0	0,0	1,3	0,0	67,6	80,9
	% of sector in GVA	14,8%	0,0%	1,6%	0,0%	83,5%	100,0%
95	Output	10,4		0,0	6,3	0,0	16,7
	Interm. Consumption	5,1		0,0	2,8	0,0	7,9
	Gross Value Added	5,3	0,0	0,0	3,5	0,0	8,8
	% of sector in GVA	60,3%	0,0%	0,0%	39,7%	0,0%	100,0%
96	Output	21,1		0,0	250,7	0,0	271,8
	Interm. Consumption	7,7		0,0	66,2	0,0	73,9
	Gross Value Added	13,4	0,0	0,0	184,5	0,0	197,9
	% of sector in GVA	6,8%	0,0%	0,0%	93,2%	0,0%	100,0%
S	Output	50,8	0,0	1,8	257,0	111,9	421,6
	Interm. Consumption	20,1	0,0	0,5	69,0	44,3	134,0
	Gross Value Added	30,7	0,0	1,3	188,0	67,6	287,6
	% of sector in GVA	10,7%	0,0%	0,5%	65,4%	23,5%	100,0%

Basis for NA Figures

Surveys and censuses

The main data source for the market producers (the combined S.11/S.14 sector) as well as those for the private non-market producers (S15 sector) is the annual economic survey (“Services and Transport Survey”). The survey results produced statistical data related to employment, output, value added, expenses and investments by economic activity based on the Statistical Classification of Economic Activities (NACE Rev.2). The survey of 2017 was conducted through personal interviews. It was carried out on a sampling basis for the enterprises employing less than 20 persons, while it covered all enterprises engaging 20 persons and over. The sample was based on the 2017 Business Register and was selected on a PPS basis (probability proportional to size). It was stratified by employment size group and by NACE. The unit of enumeration was the “enterprise”.

Most of the organizations in NACE Group 94.1 are non-profit institutions serving households (S15). To distinguish market and non-market producers, the 50% criterion is used (For more information see chapter 3.1). Activities of membership organizations not elsewhere classified (NACE 94) also contain some non-profit organizations which operate in the service of non-financial corporations (S.11) and which are treated as a special case. These are mainly the business, employers' and professional organizations whose activities fall within NACE Group 94.1. In this case, the member companies' subscriptions are treated as purchases of marketable services (see ESA2010, paragraph 3.35). NACE activities 95-96 contain only market producers, therefore sectors S.11/S.14.

Output is defined as the value of services produced, net receipts from resale of goods and other receipts, as described in the table below. Output for the non-profit institutions (NPISH) that are classified in NACE R is estimated with the sum of costs approach (intermediate consumption, compensation of employees, other taxes on production and consumption of fixed capital), using information from the survey questionnaires. For more information on the calculation of output for the NPISH Sector see section 3.1.

Table 3.25.4: Output, NACE Section S (surveys), 2017 (€ million)

		94	95	96	R
	Income from services produced	14,2	15,0	150,6	179,8
	+ Sales of goods for resale	0,0	2,5	7,2	9,7
	+ Income from rentals	5,1	0,0	0,5	5,6
	+ Income from commission	0,0	0,0	0,1	0,1
	= Total turnover	19,3	17,5	158,4	195,2
	+ Other operating income	0,2	0,0	0,4	0,6
	+ Change in stocks	0,0	0,0	0,0	0,1
	- Value of goods purchased for resale	0,0	1,8	4,8	6,6
P.1	Output (S11/S14)	19,5	15,8	154,1	189,3
P.2	Intermediate consumption	42,0	0,0	0,0	42,0
D.1	Compensation of employees	52,0	0,0	0,0	52,0
D.29	Other taxes on production	1,2	0,0	0,0	1,2
P.51c	Capital Consumption	14,4	0,0	0,0	14,4
P.1	Output (S15)	109,6	0,0	0,0	109,6
<i>P.11</i>	<i>Market Output</i>	19,5	0,0	0,0	19,5
<i>P.12</i>	<i>Output for own final use</i>	0,0	0,0	0,0	0,0
<i>P.13</i>	<i>Other non-market output</i>	90,2	0,0	0,0	90,2
	Total output (Surveys)	129,1	15,8	154,1	298,9

Intermediate consumption is the sum of direct costs, administrative costs and rentals, which is obtained from the annual economic survey. In the Survey, direct production expenses mainly cover fuels and lubricants, the cost of stationery and other materials, electricity and heating expenses,

transport costs as well as repairs and other maintenance expenses. Under this category the payments for services rendered are also included. Administrative expenses include the cost of telephones, postage, legal and accounting services as well as other service costs, such as technical and consultancy services, advertising and entertainment expenses, bank charges etc. The category rentals refers to rentals paid for buildings and machinery.

The intermediate consumption is structured as follows:

Table 3.25.5: Intermediate Consumption, NACE S (surveys), 2017 (€ million)

	94	95	96	S
Direct costs	33,0	6,9	44,1	84,1
+Administrative costs	11,4	0,7	8,5	20,6
+Rentals	1,6	0,8	12,0	14,4
Intermediate consumption	46,1	8,4	64,6	119,1

Administrative records

Two semi-government organisations, namely the Youth Foundation and the Cyprus Cultural Foundation, are classified under the General government sector, and the sources for both are administrative. The procedure followed for the production of the data is the same followed for the rest of the Central Government subsector as described in section 3.21.

Table 3.25.6: NACE S (general government), 2017 (€ million)

P2	Intermediate inputs	0,5
D1	Compensation of employees	1,3
P1	Output	1,8
B1g	Gross Value Added	1,3

Extrapolation and models

For the case of General Government (NACE 94), the estimates of the consumption of fixed capital obtained from the Perpetual Inventory Model (PIM) are included under extrapolation and models data.

Table 3.25.7: Summary, Extrapolation and Models, NACE 94, 2017 (€ million)

P1	Output	0,04
P2	Intermediate Consumption	0,00
B1g	Gross Value added	0,04

Exhaustiveness Adjustments to the basis for NA figures

Apart from the conceptual adjustments (see section 3.4) and the Balancing (see chapter 6), the following exhaustiveness adjustments are made:

Adjustment due to illegal activities: Prostitution (N2)

Illegal activities such as prostitution is not covered by surveys or reported by households. Therefore, an estimate is made and included in the data. See chapter 7 for more details.

Adjustment due to Misreporting (N6)

Adjustments are made by the survey in NACE S (Other Service Activities), for misreporting of revenue in (i) NACE Division 95 for repairs of computers and personal/or household goods and (ii) NACE Division 96 for hairdressers and beauty salons. Compilation of data in both NACE activities 95 and 96, assumes that the survey questionnaires are completed in the same way as the tax declaration. Consequently, a supplementary estimate is specifically made for output.

An additional adjustment is made for NACE Division 96, after comparing the corrected survey results with expenditure on hairdressing salons, barber shops and beauty salons, as reported by households in the Household Budget Survey. For more information, see chapter 7. For NACE Division 95, repairs of households' goods, output is confronted against expenditure in the supply and use framework and the necessary adjustments are made if needed.

Adjustment due to VAT fraud (N6)

VAT fraud (without complicity) represents the adjustment made to the output in the framework of the Supply and Use balancing procedure. For more details, see chapter 7.1.3.

Adjustment due to wages and salaries in kind (N7)

This exhaustiveness adjustment is performed in order to subtract from the intermediate consumption the value of fuels consumed for the private use of company cars. The calculation method for this income in kind is described in detail in chapter 7.1.3.

A summary of the adjustments for NACE Section S is described in the table below:

Table 3.25.8: Summary of total adjustments, NACE Section S, 2017 (€ million)

Description of activity	Output	Intermediate consumption	Gross value added
Allocation of FISIM	1,7	6,1	-4,4
Allocation of Insurance Output	0,5	1,9	-1,4
Other Conceptual	-2,3	-1,9	-0,5
R&D	0,0	0,0	0,0
Holding Gains	0,8	-0,4	1,3
Relocation to trade	-3,2	-1,4	-1,7
Exhaustiveness adjustments	121,0	7,5	113,5
Prostitution (N2)	50,2	8,1	42,0
Misreporting-surveys NACE 95 (N6)	1,0	0,0	1,0
Misreporting- surveys NACE 96 (N6)	11,0	0,0	11,0
Underreporting (N6)	47,4	0,0	47,4
VAT fraud(N6)	11,5	0,0	11,5
Wages and salaries in kind (N7)	0,0	-0,6	0,6
Balancing	0,0	0,8	-0,8
Total Adjustments	120,8	14,4	106,4

The results for NACE S can be summed up as follows:

Table 3.25.9: Summary, NACE Section S, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	300,8	119,6	181,2
Surveys and censuses	298,9	119,1	179,9
Administrative records	1,8	0,5	1,3
Combined data	0,0	0,0	0,0
Extrapolation and models	0,0	0,0	0,0
Adjustments	120,8	14,4	106,4
Data validation	0,0	0,0	0,0
Allocation of FISIM	1,7	6,1	-4,4
Allocation of Insurance Output	0,5	1,9	-1,4
Other conceptual	-2,3	-1,9	-0,5
Exhaustiveness	121,0	7,5	113,5
Balancing	0,0	0,8	-0,8
Final estimate	421,6	134,0	287,6

3.26 Activities of households as employers (NACE Rev.2 Section T)

Output for domestic services is taken to be implicitly equal to the remuneration of paid household employees, including income in kind. In line with the ESA2010 concepts, intermediate consumption is zero, since the relevant material expenditure is regarded as part of the final consumption of the employers' households. Thus, the value added is also equal to output and compensation of employees for NACE T.

Table 3.26.1: Introductory Table, NACE Section T, 2017

NACE Rev.2	Output (€ million)	Intermediate consumption (€ million)	Gross value added (€ million)	% of GVA of NACE division to GVA of NACE T	% of GVA of NACE division to Total GVA	% of GVA of NACE division to GDP	% of GVA of NACE division to GNI
97-98	166,1	0,0	166,1	100,0%	0,9%	0,8%	0,8%
T	166,1	0,0	166,1	100,0%	0,9%	0,8%	0,8%

The entire output and value added for NACE Section T is classified in Sector S14, as shown in the table below:

Table 3.26.2: NACE Section T by institutional sector, 2017

NACE Rev.2	€ million	S.11	S.12	S.13	S.14	S.15	TOTAL
97-98	Output				166,1		166,1
	Interm. Consumption				0,0		0,0
	Gross Value Added	0,0	0,0	0,0	166,1	0,0	166,1
	% of sector in GVA	0,0%	0,0%	0,0%	100,0%	0,0%	100,0%
T	Output	0,0	0,0	0,0	166,1	0,0	166,1
	Interm. Consumption	0,0	0,0	0,0	0,0	0,0	0,0
	Gross Value Added	0,0	0,0	0,0	166,1	0,0	166,1
	% of sector in GVA	0,0%	0,0%	0,0%	100,0%	0,0%	100,0%

Basis for NA Figures

Surveys and censuses

The annual "Services and Transport survey" provides information in order to calculate gross value added for this group. For the assessment of employees' remuneration in the domain of domestic

services, the survey results provide per capita information for the monthly compensation, which includes wages and salaries, employers' social contribution and income in kind (food, accommodation, travel tickets and sundries). The number of employees used in the survey is obtained directly from the Social Security Department of the Ministry of Labour, Welfare and Social Insurances, since there is a regulation regarding the employment of foreign domestic servants, and a special permit is granted to households fulfilling the necessary requirements for this. The number of employees is multiplied by the per capita survey results to obtain total gross wages and salaries, to which total employers' social contributions are then added.

The sum of total wages and salaries (including income in kind) and employers' social contributions provides the total amount of the compensation of employees, as shown in the table below. The total compensation for NACE T in 2017 which is obtained from the survey results is €158,5 million.

Table 3.26.3: Compensation of employees (Survey results) for NACE T, 2017

(1)	Number of household employees	20.221
(2)	Per capita wages & salary, monthly (€)	360
(3)	Employment in months	12
(4)=(1)*(2)*(3)	Actual wages & salary, annual (€)	87.354.720
(5)	Per capita income in kind, monthly (€)	186,24
(6)=(1)*(3)*(5)	Income in kind, annual (€)	45.191.251
(7)=(4)+(6)	Total Wages and Salaries, annual (€)	132.545.971
(8)	Per capita contributions, monthly (€)	107,10
(9)=(1)*(3)*(8)	Actual contributions, annual (€)	25.988.029
(10)=(4)+(6)+(9)	Compensation of employees (Baseline statistics)	158.534.000

Exhaustiveness Adjustments to the basis for NA figures

Adjustment due to Misreporting (N6)

On the baseline statistics allowances and adjustments are made in order to cover unreported revenue, based on expenditure for domestic servants in the Household Budget Survey 2015. Due to a number of unregistered employees or registered employees that work extra on their free time, the survey results are underestimated. Thus, an adjustment is made based on the amount reported by households from the expenditure side. For more information, see chapter 7.

A summary table for NACE T is shown below:

Table 3.26.4: Summary, NACE Section T, 2017 (€ million)

	Output	Intermediate consumption	Gross value added
Basis for NA Figures	158,5	0,0	158,5
Surveys and censuses	158,5	0,0	158,5
Administrative records	0,0	0,0	0,0
Combined data	0,0	0,0	0,0
Extrapolation and models	0,0	0,0	0,0
Adjustments	7,5	0,0	7,5
Data validation	0,0	0,0	0,0
Allocation of FISIM	0,0	0,0	0,0
Other conceptual	0,0	0,0	0,0
Exhaustiveness	7,5	0,0	7,5
Balancing	0,0	0,0	0,0
Final estimate	166,1	0,0	166,1

3.27 Activities of extraterritorial organisations and bodies (NACE Rev.2 section U)

This section is relevant for chapter 8.

3.28 Taxes on products, including VAT

The most important taxes on products for 2017 (€ million) are presented below:

D.211 Value Added Type Taxes (VAT)

VAT on products	1.720,3
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D.212 Taxes on duties and imports, excluding VAT

Import duties	
Import duties	3,3
Import duties – Postal Services	0,1
Traditional Own Resources	30,1
Excise duties	
Added Consumption Tax on Motor Vehicles	1,3
Excise – Motor Vehicles	11,8
General Sales Taxes	
Double cabin motor vehicles	0,2
Motor vehicles of the “van” type	0,0
Vessels for pleasure and their engines	0,0
Motor-cycles	0,5
Cigars and cigarillos	2,7
Other	0,5

D.214 Taxes on Products, Except VAT and Import Taxes

Excise Duties and Consumption Taxes	
Tax on Energy Conservation (Funds)	43,8
Excise – Tobacco	185,2
Excise – Spirits	23,8
Excise – Beer	14,0
Excise – Hydrocarbon Oils	409,5
Stamp Taxes	
Stamp Duties	38,2
Refugee Stamp	0,8
Lands and Surveys Fees	101,6
Taxes on Entertainment	
Tax on Entertainment	1,5 *

Tax on Hotels	8,5	*
Taxes on Lotteries, Gambling and Betting		
Tax on Horse betting	1,9	*
Tax on Pool Bettings	6,4	
Tax on Horseracing Betting	0,8	
Other taxes on specific services		
Specific licences-Radio Television	1,5	
Specific licences-Electronic Communications & Postal	3,2	
Specific licences-Energy	2,0	
Other Taxes on Products n.e.c.		
Stock Holding Company Fees	18,8	

Note: Amounts marked with an asterisk are solely collected by the Local Government. The remaining taxes are collected by the Central Government.

The classification rules applied to taxes on products follow the description as it is laid out in the ESA 2010 manual and the MGDD. There are no borderline cases.

Cash receipts are used for the calculation of taxes on products. These cash receipts are time-adjusted in order to ensure the application of the accrual time of recording principle to the estimates of taxes on products (including VAT). The adjustment is based on the average difference between the activity and the cash tax receipt which is two months.

Tax (including VAT) amounts unlikely to be collected (Regulation (EC) No 2516/2000) are not recorded / applicable in Cyprus. Only cash receipts are reported.

3.29 Subsidies on products

Total subsidies on products (D.31) for 2017 are amounted to €60,3 million. A list of these subsidies is indicated below:

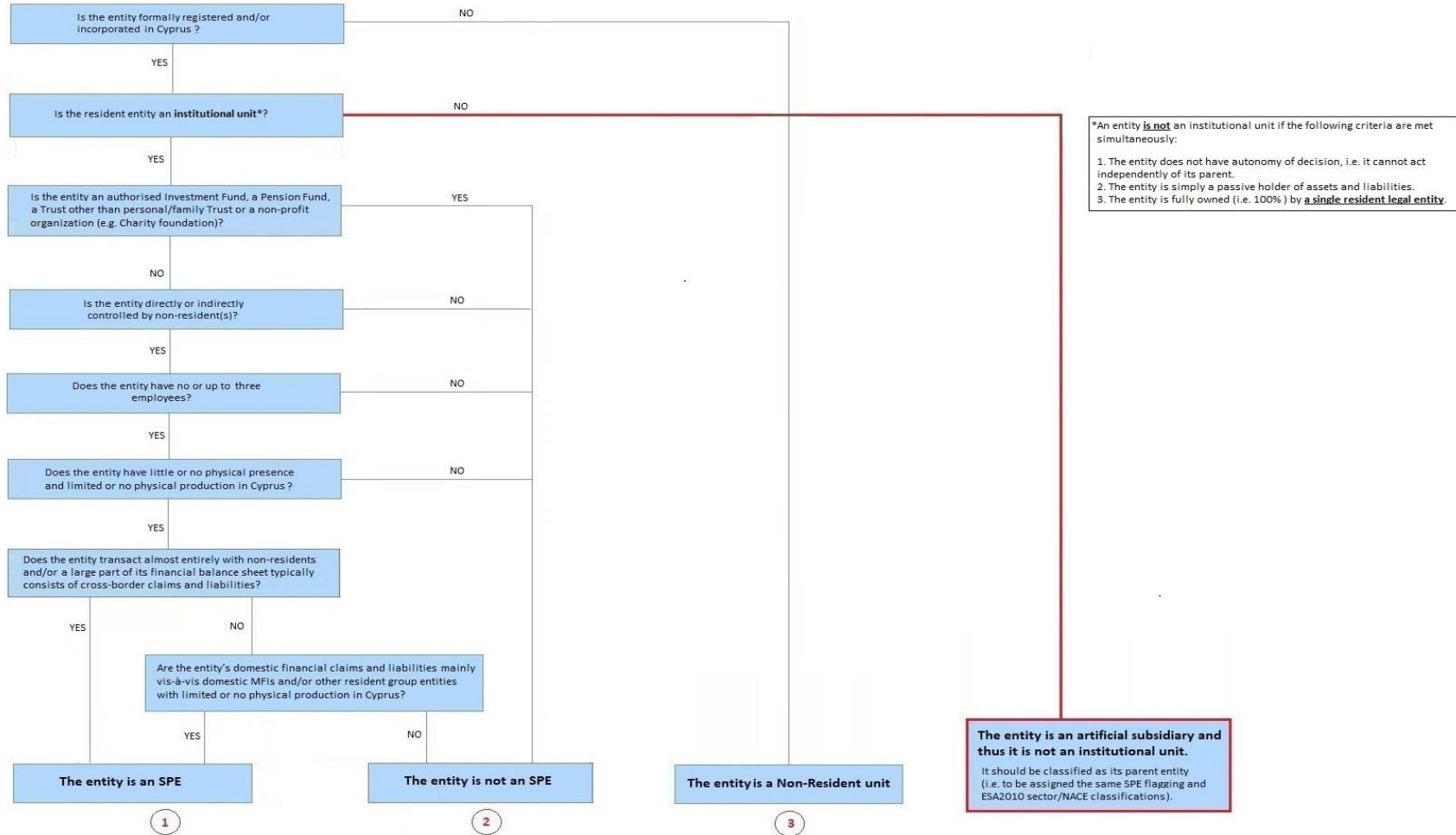
	€ million
• Drugs Subsidy Scheme	0,2
• Subsidisation of Public Road Transportation	43,8
• Other Agricultural and Veterinary Subsidies	11,0
• Subsidisation of Veterinarians	0,1
• Cyprus Agricultural Payments Organisation	5,2

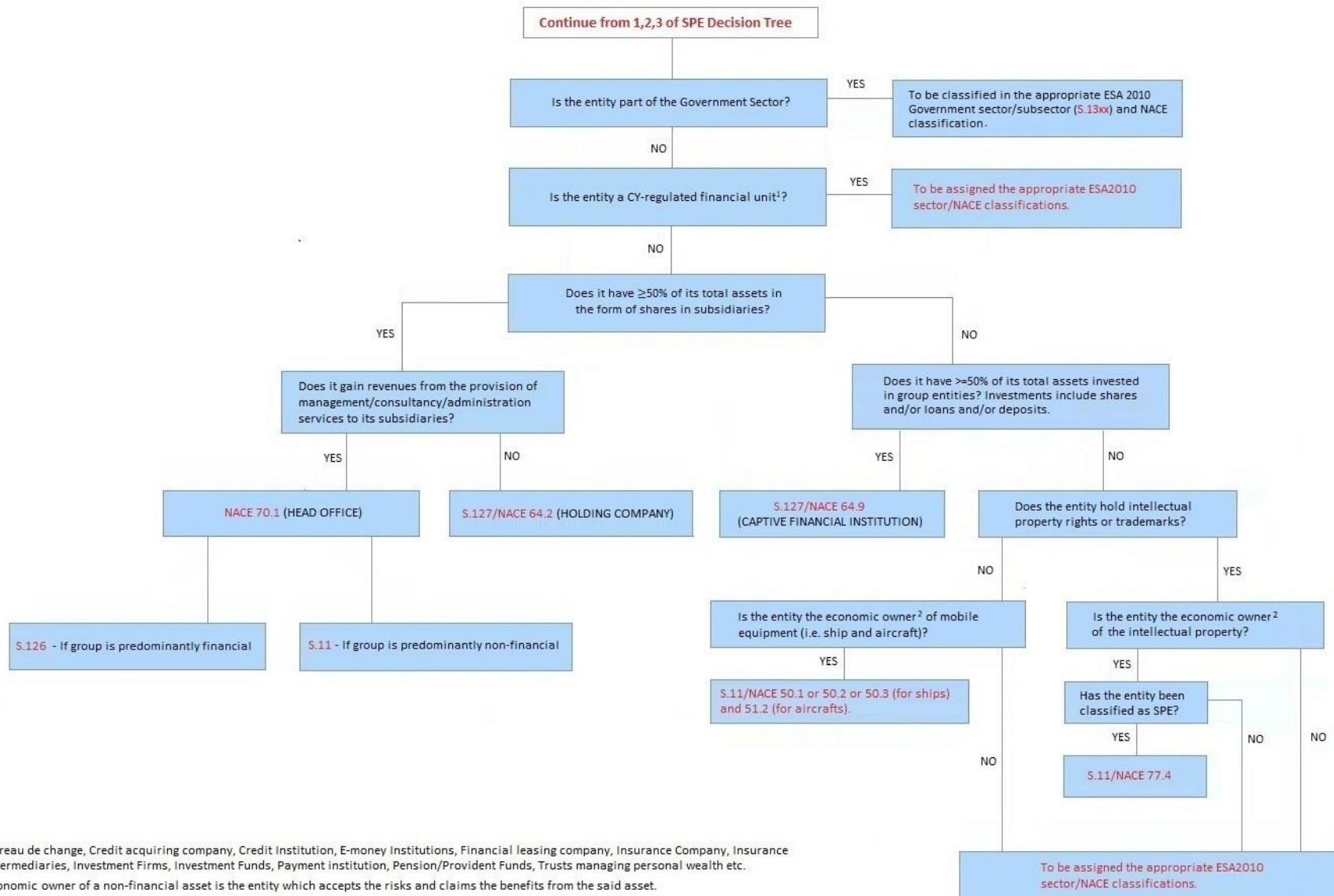
The classification rules applied to subsidies on products are the ones laid out in ESA2010. No borderline cases exist.

A time adjustment is made for subsidies on products from EU in order to attain accrual time of recording. For the remaining subsidies (paid from Government) the obligation to pay starts at the time when the amount is verified and it is eligible to be paid. Therefore, the cash time of recording is equivalent to accrual. The latter was also confirmed by the GFS section, which is the data source.

ANNEX 3.1

Decision Tree SPEs





ANNEX 3.II

FISIM Output – S122: Breakdown by domestic sector, 2017, € million

Stocks and Interest in All currencies

Stocks		2017Q1	2017Q2	2017Q3	2017Q4	2017
LOANS = ASSETS s122						
S11	- Non-financial corporations	20.108	19.751	19.395	18.947	18.947
S123-S127	- Financial auxiliaries	3.615	3.880	3.671	3.436	3.436
S128-S129	- Insurance corporations and pension funds	15	18	14	14	14
S13	- General Government	421	418	418	399	399
S14	- Households	20.373	20.297	19.769	19.642	19.642
	as consumers	7.698	7.664	7.394	7.298	7.298
	as owners of dwellings	11.412	11.345	11.136	11.123	11.123
	as owners of unincorporated enterprises	1.378	1.357	1.320	1.295	1.295
S15	- Non-profit institutions serving households	156	153	137	134	134
TOTAL		44.800	44.584	43.485	42.646	42.646
DEPOSITS = LIABILITIES s122						
S11	- Non-financial corporations	7.470	7.763	8.000	8.251	8.251
S123-S127	- Financial auxiliaries	2.897	2.473	2.943	2.904	2.904
S128-S129	- Insurance corporations and pension funds	1.958	1.939	1.998	1.900	1.900
S13	- General Government	665	659	665	726	726
S14	- Households	22.689	22.846	22.850	23.170	23.238
	as consumers	21.868	21.944	21.935	22.238	21.848
	as owners of dwellings	0	0	0	0	0
	as owners of unincorporated enterprises	821	902	915	932	932
S15	- Non-profit institutions serving households	450	459	443	467	467
TOTAL		36.128	36.139	36.897	37.418	37.418

Accrued Interest		2017Q1	2017Q2	2017Q3	2017Q4	2017
LOANS = ASSETS s122						
S11	- Non-financial corporations	181	185	165	147	679
S123-S127	- Financial auxiliaries	48	53	59	61	221
S128-S129	- Insurance corporations and pension funds	0	0	0	0	0
S13	- General Government	3	3	3	3	12
S14	- Households	174	174	166	160	674
	as consumers	75	75	72	69	290
	as owners of dwellings	80	80	76	74	310
	as owners of unincorporated enterprises	19	19	18	18	74
S15	- Non-profit institutions serving households	1	1	1	1	5
TOTAL		408	416	395	372	1.591
DEPOSITS = LIABILITIES s122						
S11	- Non-financial corporations	10	10	10	10	41
S123-S127	- Financial auxiliaries	7	6	6	6	25
S128-S129	- Insurance corporations and pension funds	7	7	7	6	28
S13	- General Government	2	3	3	2	10
S14	- Households	70	69	57	56	252
	as consumers	68	66	55	54	244
	as owners of dwellings	0	0	0	0	0
	as owners of unincorporated enterprises	2	2	2	2	8
S15	- Non-profit institutions serving households	1	1	1	1	5
TOTAL		99	96	83	81	359
Internal Reference Rates (IRR)		0,37%	0,35%	0,20%	0,20%	1,11%

FISIM Calculations

		2017Q1	2017Q2	2017Q3	2017Q4	2017
LOANS = ASSETS s122						
S11	- Non-financial corporations	109	117	126	109	461
S123-S127	- Financial auxiliaries	38	42	50	52	181
S128-S129	- Insurance corporations and pension funds	0	0	0	0	0
S13	- General Government	1	2	2	2	7
S14	- Households	99	104	126	121	450
	as consumers	47	48	57	54	206
	as owners of dwellings	38	41	54	52	185
	as owners of unincorporated enterprises	14	14	16	15	59
S15	- Non-profit institutions serving households	1	1	1	1	3
TOTAL		248	265	305	285	1.103
DEPOSITS = LIABILITIES s122						
S11	- Non-financial corporations	15	15	7	8	45
S123-S127	- Financial auxiliaries	1	2	0	1	4
S128-S129	- Insurance corporations and pension funds	0	0	-2	-2	-5
S13	- General Government	0	0	-1	-1	-3
S14	- Households	12	10	-10	-10	2
	as consumers	11	9	-10	-10	0
	as owners of dwellings	0	0	0	0	0
	as owners of unincorporated enterprises	1	1	0	0	2
S15	- Non-profit institutions serving households	0	0	0	0	0
TOTAL		29	27	-7	-4	44

TOTAL FISIM (Loans plus Deposits)

		2017Q1	2017Q2	2017Q3	2017Q4	2017	
S11	- Non-financial corporations	P2	123,4	132,8	132,3	117,0	505,5
S123-S127	- Financial auxiliaries	P2	38,9	43,1	50,5	52,9	185,5
S128-S129	- Insurance corporations and pension funds	P2	0,5	-0,2	-2,4	-2,2	-4,3
S13	- General Government	P2	1,4	1,3	0,5	1,0	4,2
S14	- Households		111,5	113,7	116,0	110,9	452,0
	as consumers	P3	58,1	57,4	46,3	44,2	206,0
	as owners of dwellings	P2	38,3	40,7	53,9	51,5	184,4
	as owners of unincorporated enterprises	P2	15,0	15,5	15,8	15,2	61,6
S15	- Non-profit institutions serving households	P2	1,1	1,1	0,8	0,7	3,8
TOTAL FISIM			276,8	291,9	297,7	280,3	1.146,7

NOTE:

FISIM calculations (loans) = Accrued Interest – (Stock x IRR)

FISIM calculations (deposits) = (Stock x IRR) - Accrued Interest

FISIM Output – S122: Exports, 2017, € million
Stocks and Interest in All currencies

Stocks	2017Q1	2017Q2	2017Q3	2017Q4	2017
LOANS					
Non-resident non-FIs	4.637	4.430	4.240	4.070	4.070
Non-resident FIs	7.225	6.481	6.561	6.141	6.141
TOTAL Exported FISIM on loans	11.863	10.891	10.801	10.211	10.211
DEPOSITS					
Non-resident non-FIs	11.589	10.743	10.446	10.255	10.255
Non-resident FIs	8.534	8.283	8.042	7.684	7.684
TOTAL Exported FISIM on deposits	20,123	19.026	18.488	17.940	17.940

Accrued Interest	2017Q1	2017Q2	2017Q3	2017Q4	2017
LOANS					
Non-resident non-FIs	58	58	55	57	228
Non-resident FIs	22	22	20	20	84
TOTAL Exported FISIM on loans	81	80	75	76	312
DEPOSITS					
Non-resident non-FIs	43	35	35	32	145
Non-resident FIs	57	52	62	58	229
TOTAL Exported FISIM on deposits	99	86	97	91	374
External reference rates (ERR)	0.50%	0.50%	0.56%	0.56%	2.1%

Export of FISIM calculations	2017Q1	2017Q2	2017Q3	2017Q4	2017
LOANS					
Non-resident non-FIs	35	36	31	34	136
Non-resident FIs	-14	-10	-17	-15	-56
TOTAL Exported FISIM on loans	21	26	14	19	80
DEPOSITS					
Non-resident non-FIs	15	19	23	26	83
Non-resident FIs	-14	-10	-17	-15	-56
TOTAL Exported FISIM on deposits	1	9	6	11	27

TOTAL Export of FISIM (Loans plus Deposits)	2017Q1	2017Q2	2017Q3	2017Q4	2017
Non-resident non-FIs	50.5	55.2	54.7	59.3	219.6
Non-resident FIs	-27.9	-20.4	-34.0	-30.0	-112.3
TOTAL Exported FISIM	22.5	34.8	20.7	29.3	107.3

NOTE:

FISIM calculations (loans) = Accrued Interest – (Stock x ERR)

FISIM calculations (deposits) = (Stock x ERR) - Accrued Interest

Imports of FISIM by domestic sector, 2017, € million
Stocks and Interest in All currencies

Stocks		2017Q1	2017Q2	2017Q3	2017Q4	2017
LOANS = ASSETS s122						
S11	- Non-financial corporations	8.781	8.935	9.098	9.970	9.970
S123-S127	- Financial auxiliaries	51.079	49.986	46.158	46.018	46.018
S128-S129	- Insurance corporations and pension funds					0
S13	- General Government	1.093	1.138	1.199	1.180	1.180
S14	- Households	383	433	448	458	458
	as consumers					0
	as owners of dwellings					0
	as owners of unincorporated enterprises	383	433	448	458	458
S15	- Non-profit institutions serving households					0
TOTAL		61.338	60.470	56.900	57.606	57.606
DEPOSITS = LIABILITIES s122						
S11	- Non-financial corporations	731	792	883	573	573
S123-S127	- Financial auxiliaries	4.704	4.383	4.195	3.828	3.828
S128-S129	- Insurance corporations and pension funds	82	81	78	83	83
S13	- General Government					0
S14	- Households	4.238	3.918	3.707	3.624	3.624
	as consumers	4.238	3.918	3.707	3.624	3.624
	as owners of dwellings					0
	as owners of unincorporated enterprises					0
S15	- Non-profit institutions serving households					0
TOTAL		9.755	9.154	8.842	8.107	8.107



Accrued Interest		2017Q1	2017Q2	2017Q3	2017Q4	2017
LOANS = ASSETS s122						
S11	- Non-financial corporations	84	85	87	108	363
S123-S127	- Financial auxiliaries	438	487	423	488	1.833
S128-S129	- Insurance corporations and pension funds					0
S13	- General Government	2	2	2	2	9
S14	- Households	2	2	2	2	8
	as consumers					0
	as owners of dwellings					0
	as owners of unincorporated enterprises	2	2	2	2	8
S15	- Non-profit institutions serving households					0
TOTAL		524	578	514	600	2.214
DEPOSITS = LIABILITIES s122						
S11	- Non-financial corporations	1	1	1	1	3
S123-S127	- Financial auxiliaries	25	24	19	19	86
S128-S129	- Insurance corporations and pension funds	0	0	0	0	1
S13	- General Government					0
S14	- Households	13	12	12	13	50
	as consumers	13	12	12	13	50
	as owners of dwellings					0
	as owners of unincorporated enterprises					0
S15	- Non-profit institutions serving households					0
TOTAL		38	37	32	33	140
Internal Reference Rates (IRR)		0,50%	0,50%	0,56%	0,58%	1,89%

FISIM Calculations		2017Q1	2017Q2	2017Q3	2017Q4	2017
LOANS = ASSETS s122						
S11	- Non-financial corporations	40	40	38	52	167
S123-S127	- Financial auxiliaries	181	236	164	228	808
S128-S129	- Insurance corporations and pension funds	0	0	0	0	0
S13	- General Government	-4	-4	-3	-3	-12
S14	- Households	0	0	0	0	-1
	<i>as consumers</i>	0	0	0	0	0
	<i>as owners of dwellings</i>	0	0	0	0	0
	<i>as owners of unincorporated enterprises</i>	0	0	0	0	-1
S15	- Non-profit institutions serving households	0	0	0	0	0
TOTAL		217	272	197	276	962
DEPOSITS = LIABILITIES s122						
S11	- Non-financial corporations	3	3	4	3	13
S123-S127	- Financial auxiliaries	-1	-2	5	3	5
S128-S129	- Insurance corporations and pension funds	0	0	0	0	1
S13	- General Government	0	0	0	0	0
S14	- Households	9	8	8	7	32
	<i>as consumers</i>	9	8	8	7	32
	<i>as owners of dwellings</i>	0	0	0	0	0
	<i>as owners of unincorporated enterprises</i>	0	0	0	0	0
S15	- Non-profit institutions serving households	0	0	0	0	0
TOTAL		11	9	18	13	51

TOTAL Import of FISIM (Loans plus Deposits)		2017Q1	2017Q2	2017Q3	2017Q4	2017
S11	- Non-financial corporations	42,6	43,0	39,8	54,3	179,7
S123-S127	- Financial auxiliaries	179,6	233,9	168,8	230,8	813,2
S128-S129	- Insurance corporations and pension funds	0,3	0,3	0,3	0,3	1,2
S13	- General Government	-3,5	-3,5	-2,5	-2,9	-12,5
S14	- Households	8,4	7,6	7,9	6,7	30,6
	<i>as consumers</i>	8,5	7,8	8,3	7,1	31,8
	<i>as owners of dwellings</i>	0,0	0,0	0,0	0,0	0,0
	<i>as owners of unincorporated enterprises</i>	-0,2	-0,2	-0,4	-0,5	-1,2
S15	- Non-profit institutions serving households	0,0	0,0	0,0	0,0	0,0
TOTAL Import of FISIM		227,3	281,4	214,3	289,3	1.012,2
	of which private consumption	8,5	7,8	8,3	7,1	78,2
	of which general government consumption	-3,5	-3,5	-2,5	-2,9	-11,3
	of which NPISH consumption	0,0	0,0	0,0	0,0	0,0
	of which intermediate consumption	222,3	277,0	208,5	285,0	992,9
TOTAL Import of FISIM		227,3	281,4	214,3	289,3	1.012,2

NOTE:

FISIM calculations (loans) = Accrued Interest – (Stock x ERR)

FISIM calculations (deposits) = (Stock x ERR) - Accrued Interest

CHAPTER 4: THE INCOME APPROACH

4.0 GDP according to the income approach

The GDP in Cyprus is calculated from the production, the expenditure and the income approach. However, the GDP level is determined from the production and expenditure approaches, while the income approach is a residual approach, since there is no independent estimate for operating surplus/mixed income.

A summary table describing the income approach by NACE activity, for 2017, is provided below:

Table 4.0.1: The breakdown of income components by NACE sections, 2017 (€ million)

NACE Rev. 2	Compensation of employees D1	Wages and salaries D11	Employers' contribution D12	Other Taxes on production D29	Other Subsidies on production D39	Net operating surplus and mixed income B2+B3	Capital consumption P51C	GDP at basic prices	Taxes on products D21	Subsidies on products D31	GDP at market prices
TOTAL	8.801,7	7.234,6	1.567,1	401,7	62,2	6.075,7	2.456,4	17.673,3	2.632,3	60,3	20.245,3
A	92,8	75,4	17,4	35,2	62,2	262,2	48,2	376,2			
B	19,1	16,2	2,9	19,3	0,0	-48,4	27,4	17,3			
C	635,4	547,1	88,3	25,7	0,0	188,1	141,3	990,4			
D	97,7	68,5	29,2	23,7	0,0	-33,7	135,2	222,8			
E	66,0	51,4	14,6	1,5	0,0	25,5	54,8	147,8			
F	471,6	407,6	64,1	30,1	0,0	353,5	65,6	920,9			
G	1.129,1	1.001,1	128,0	55,8	0,0	657,5	146,8	1.989,1			
H	430,2	368,9	61,3	71,1	0,0	411,6	327,3	1.240,2			
I	656,7	580,4	76,2	26,1	0,0	487,6	99,3	1.269,7			
J	405,8	348,6	57,2	5,9	0,0	596,9	140,4	1.149,0			
K	998,6	817,7	181,0	12,5	0,0	718,2	58,9	1.788,3			
L	29,7	26,3	3,3	5,8	0,0	897,4	666,3	1.599,3			
of which Nace 68.2	0,0	0,0	0,0	0,0	0,0	249,9	663,7	913,7			
M	666,4	583,3	83,1	46,6	0,0	800,4	52,1	1.565,5			
N	188,2	166,5	21,7	8,8	0,0	115,1	15,5	327,7			
O	1.187,9	838,2	349,8	0,0	0,0	74,3	295,0	1.557,2			
P	884,8	657,3	227,5	3,2	0,0	86,4	103,0	1.077,4			
Q	453,7	346,3	107,4	2,8	0,0	198,9	37,4	692,8			
R	100,3	86,7	13,6	23,4	0,0	137,2	27,1	288,0			
S	121,7	107,1	14,6	4,1	0,0	147,1	14,7	287,5			
T	166,1	140,1	26,0	0,0	0,0	0,0	0,0	166,1			

The income approach takes into account all recipients' income within Cyprus economy. Specifically, it consists of the primary income categories which resident production units and individuals receive in the process of production of goods and services.

Resident production units are corporations (financial and non-financial) and self-employed persons as market producers and General Government and Non-Profit Institutions Serving Households (NPISH) units as non-market producers.

Thus, the income approach of GDP is the sum of primary incomes of production units and employees. In detail:

- Compensation of employees is the primary income of individual employees engaged in the production process.
- Mixed income is the primary income of self-employed households as market producers.
- Gross operating surplus is the primary income of market and non-market producers.

In addition to these income categories, the value of all taxes on production and imports is added and the value of all subsidies on production is deducted to obtain the final figure equal to GDP at market prices.

In equation form:

$$\text{GDP (income approach)} = \text{compensation of employees} + \text{mixed income} + \text{gross operating surplus} + \text{taxes on production and products} - \text{subsidies on production and products}.$$

The various components of the income approach by institutional sector are presented in the table below:

Table 4.0.2: The Income approach of GDP by Institutional Sector, 2017 (€ million)

ESA 2010 Code	Transaction/ Balancing item	Total	%	S.11	S.12	S.13	S.14	S.15
D.1 pay	Compensation of employees	8.801,7	43,5	4.823,9	995,8	2.363,6	492,1	126,2
D.11 pay	Wages and salaries	7.234,6	35,7	4.211,8	815,5	1.667,7	429,2	110,5
D.12 pay	Employers' contributions	1.567,1	7,7	612,2	180,4	695,9	62,9	15,7
D.29 pay	Other taxes on production	401,7	2,0	280,3	12,5	0,0	107,2	1,7
D.39 rec	Other subsidies on production	62,2	0,3	47,3	0,0	0,0	14,9	0,0
B.2n/B.3n	Net Operating surplus/ Mixed Income	6.075,7	30,0	2.445,8	709,7	105,2	2.815,0	0,0
P.51.c	Consumption of Fixed Capital	2.456,4	12,1	1.085,5	58,9	448,4	836,5	27,1
B1G	Gross domestic product, at basic prices	17.673,3	87,3	8.588,2	1.776,9	2.917,2	4.236,0	155,0
D21p	Taxes on Products	2.632,3	13,0					
D31p	Subsidies on products	60,3	0,3					
B1G	Gross domestic product, at market prices	20.245,3	100,0					

4.1 The reference framework

National Accounts Main Aggregates team is responsible for the collection and processing of data which is necessary for the production of the annual data for compensation of employees. For this purpose, the estimates for the compensation of employees are organised and carried out through a specific data management file, which covers the annual economic survey data (private sector) for wages and salaries and employers contributions as well as the relevant information for the compensation of employees (wages and contributions) for the General Government Sector. A numerical example for the estimation of compensation of employees is shown in section 4.7.

The main data sources for the compilation of the GDP from the expenditure side are based on the annual economic surveys conducted by CYSTAT, ad-hoc surveys and administrative data (FIMAS). Data on wages and salaries (including income in kind) is surveyed in monetary terms and processed in this form. Employers contributions are determined either from administrative data or from annual economic surveys. For more information, see section 4.7.

Moreover, data for taxes and subsidies on products are derived from administrative sources, i.e. FIMAS, which provides data for the Central Government as well as the financial statements for the Local Government, Semi-Government and Social Security Funds. The above mentioned data is collected and analysed in the context of compiling the non-financial accounts for General Government sector and its subsectors. The responsibility of Government Finance Statistics (GFS) and other ESA related tables is undertaken from the GFS section.

Main Sources

The income approach is based on a combination of sources under the framework of the compilation of institutional sector accounts, which are mentioned below:

- S13: The compensation of employees for the General Government Sector is mainly derived from administrative sources (National Treasury of the Republic).
- S12: The compensation of employees for Financial Corporations is derived using the average monthly earnings (based on administrative sources).
- S11, S14, S15: The compensation of employees for non-financial corporations, households (self-employed) and NPISH, is based on the annual economic surveys.
- Taxes and subsidies on production: are determined for the whole economy using information from the GFS section.

- Depreciation of capital for all sectors, is estimated using the Perpetual Inventory Method (PIM). For more information, see section 4.12.
- Mixed income and operating surplus is estimated as a residual item by the balancing process.

The main data sources for the income approach components of GDP are shown in the table below:

	Sources	Data
(a)	Annual economic survey data	<ul style="list-style-type: none"> • Compensation of employees per economic activity, gross wages and salaries of total employees per activity sector (excluding sectors A, K, and public employees) • Number of total employees (excluding sectors A, K and public employees)
(b)	Average Monthly earnings	Monthly earnings for NACEs K and A
(c)	Final accounts of Central government and local authorities (administrative data)	<ul style="list-style-type: none"> • Compensations, Wages, Imputed social contributions on government employees by NACE activity • Taxes on production, subsidies on production
(d)	National Treasury of the Republic	Number of Government employees by NACE activity sector
(e)	Agricultural Census 2016	Number of employees and hours worked in Agriculture
(f)	Labour Statistics Employment and Job Vacancy Survey, Labour Force Survey (LFS)	Number of persons employed
(g)	Social Security Fund	Number of Employees for NACE activities A and T
(h)	Labour Cost Survey	Employers Social contributions for NACE K
(i)	Annual reports of semi-government organizations (S13)	Wages and salaries, employers' contribution in NACE activities

Quality of the statistical sources used for the income approach

As already mentioned above, the estimations for several components for the income approach of GDP (except for Operating Surplus/Mixed Income) are determined from independent sources, such as annual economic surveys, administrative sources and ad-hoc surveys, which are described below.

a) Economic surveys are the main source of information for the income account. They are providing data on persons engaged, wages and salaries, employers contribution and indirect taxes paid. The annual economic surveys are carried out on a sample basis. The survey samples are based on the Business Register which is updated continuously (for detail information on each survey see chapter 10). A description on the main definitions and instructions regarding the valuation in survey questionnaires is provided below:

- **Persons Engaged:** Refers to the average number of all employees of the enterprise. It includes working proprietors, unpaid family workers, (provided they worked for at least half the normal hours), apprentices and all other employees. The average employment for the year is derived as a simple twelve-month average. Part-time workers, are persons working less than the usual number of days of operation of the enterprise, or persons working fewer hours every day, were converted into full-time equivalents using as a conversion factor the number of working days for which the enterprise usually operates (230 to 260 man-days per year depending on the NACE category) or the normal hours worked by full-time employees.
- **Days Worked per Enterprise:** Refers to the total number of days actually spent by persons engaged at work. Days spent on vacation, holiday, casual or sick leaves are excluded.
- Concerning the **activity of Agriculture**, which by nature is quite different from the standard economic surveys, the following definitions are used:

Employment in Agriculture is expressed in “full time equivalent” number of persons. This approach is based on the total duration of work in the farm. The full-time equivalent number of holders and family members employed is derived by dividing the total work input by 40 weeks. (Those farmers working for more than 40 weeks per year are taken as fully occupied in agriculture). Permanent employees are those persons who work on a regular and continuous basis on the farm (for at least six months) for pay in cash or in kind or both. Casual employees refer to those workers whose services are occasionally utilised i.e. they don’t work on a regular and continuous basis, even though they may happen to be hired on various occasions during the year.

- **Gross wages and salaries** comprise all remuneration in cash and in kind of all Cypriot and foreign nationals employed in Cyprus businesses and organizations, i.e. domestic concept of employment (workers, salaried employees, apprentices, and people carried out civilian service and military service) for the work they carry out. In detail, Wages and salaries include normal wages and salaries, 13th and 14th salaries, overtime earnings, bonuses, value of payments in kind (meals and drinks, uniforms, transportation, housing allowances, etc.), cost of living allowance, payment for leave days etc., and family allowances paid

directly by the employer. The payments are given gross, i.e. before any deductions are made, such as income tax, social insurance and other funds. They also include imputed wages for unpaid family members, working proprietors and partners.

The valuation of wages and salaries in kind varies depending on the origin (i.e. whether they are produced or purchased by the employer). In cases where there is evidence that wages and salaries in kind are provided at reduced prices, the amount paid by the employee is deducted and the net figure is recorded as wages in kind.

Wages and salaries in kind exclude expenditure from which benefits the employer, because it is necessary for their production process, such as business travel expenses and clothing used mainly at work. For clothing for example, the estimated figure for income in kind represents a proportion of the relative usage of the good. No allowance is made though for business travel expenses, i.e. there was no inclusion of these expenses as income in kind.

- **Employers' contributions** to various funds include social insurance, provident and pension funds, medical, redundancy and other funds.
- **Depreciation** refers to the estimated value of depreciation for capital goods such as buildings, machinery, vehicles, furniture etc. It is based on Business accounting depreciation concepts which are not in line with ESA 2010. As a result, National Accounts (NA) calculates depreciation for all sectors using the PIM.
- **Indirect taxes:** Annual surveys collect data on motor vehicle licences, professional and municipality taxes, fees for business licences, stamp duties and other indirect taxes. For NA the source of data for taxes and subsidies is the GFS section and not the annual surveys.

b) **Administrative data** is available on an annual basis and covers the evaluation of NACE T and the General Government Sector.

c) **Ad-hoc surveys** are carried out for specific purposes. As the private use of company cars and tipping, are not covered by the annual economic surveys, ad-hoc surveys are carried out as to estimate these two components, considered as income in kind.

4.2 Borderline cases

Between wages and salaries and intermediate consumption

The scope of annual economic surveys is to collect data relevant to employment, wages, production expenses, stocks and equipment of the enterprises. Based on the instructions given to the enumerators, the survey covers wages and salaries, 13th and 14th salary, overtime payments, tips and the value of income in kind such as paid vacations, meals, drinks, accommodation, transportation. When doing so, attention is given on borderlines cases between wages and intermediate consumption. For example, wages and salaries in kind, exclude expenditure from which benefits the employer because it is necessary for the production process, such as business travel expenses and clothing used mainly at work.

Despite the instructions given to enumerators, NA considers that the private use of company cars for fuels consumed is not covered by annual surveys. An amount of €33,6 million is deducted from intermediate consumption of companies and reported as private consumption and compensation of employees in the income account (see chapter 7).

Daily allowances are currently fully allocated as intermediate consumption for both private and public sector. This issue is currently open until final implementation of the transversal reservation on the “Recording of daily allowances”, where it will be appropriately recorded and allocated partly to wages and salaries and partly to intermediate consumption.

Between gross operating surplus or mixed income and intermediate consumption

According to ESA 2010 regulation, intangible assets that were previously recorded as intermediate consumption, are now included as part of the gross fixed capital formation. These changes have raised the output in the production account and consequently lead to an increase on operating surplus in the income account. For more information, refer to chapter 5.10.

Concerning taxes on production and imports and subsidies

Taxes on production and imports are provided by the GFS section. They are calculated from the receipts of General Government. The classification and the borderline between taxes and fees is based on a decision tree developed with the assistance of Eurostat experts. The introduction of the FIMAS in recent years enabled a more efficient and detailed analysis that allowed a more clear distinction between a payment for a service and a tax payment. For more information see chapter 3.28.

4.3 Valuation

The definitions and concepts used by annual economic surveys conducted by CYSTAT are in line with ESA 2010 requirements (See section 4.1). For compensation of employees, exhaustiveness adjustments as income in kind and tips are made by NA section. For more information, see chapter 7.

The data sources used for income approach (Economic Surveys and Administrative data) are provided on accrual basis with the exception of subsidies from EU. For the latter, the data source is the Cyprus Agricultural Payment Organisation (CAPO), which provides data on cash basis. The data is transformed on accrual basis by NA using detailed information on the reference period for each payment operated.

4.4 Transition from private accounting and administrative concepts to ESA 2010 National Accounts concepts

Comparative description of the concepts used in private and public accounting with National Accounts concepts

In the income approach of GDP, four major differences can be quoted between the private accounting and administrative concepts and the ESA 2010 NA concepts, namely payments in kind and tips, capital consumption (depreciation), the treatment of taxes and subsidies and the profit concept.

- The NA concept of wages and salaries is different in some terms from the corresponding specific concept of private accounting and administrative practice. Undertakings do not include the costs of company-car use and tips, whereas the NA identify these as payments in kind and proceed to an adjustment (see chapter 7).
- In addition, the method for calculating depreciation in NA is quite different from that used in accounting practice. Enterprises generally determine their fixed-asset depreciation on the basis of rules approved by the tax authorities, where the proposed depreciation rate includes also an element of investment incentive. On the other hand, the method adopted by the NA, which is the PIM, calculates capital consumption according to technical relationships which is believed to describe a more realistic economic correspondence (for more information see section 4.12).

- The data sources for taxes and subsidies is mainly the GFS section which produce data on accrual basis. For subsidies paid from the EU (D39 Other subsidies on production), the transformation in accrual basis is made by the NA section, as described in section 4.3.
- The profit concept used in business accounting is not comparable with the concept of the operating surplus or mixed income in NA. Since CYPSTAT estimates the Operating Surplus /Mixed Income as a residual balancing component, no adjustment is needed.

Measures taken to ensure a satisfactory transition from private accounting and from government accounting to ESA 2010 concepts

Private accounting and administrative data are the basic sources for income approach. The conceptual changes, shown below, are part of the measures taken in order to ensure a satisfactory transition from private accounting and administrative data to ESA 2010 concepts. These changes affect the estimation of intermediate consumption and thus, the operating surplus.

Table 4.4.1: Conceptual adjustments in the income account, by institutional sector, 2017 (€ million)

Conceptual adjustments	Institutional Sector	Impact on Gross Operating Surplus
Production and allocation of Fisim	S11	-671,6
Durable goods of small value	S11	0,0
Holding gains	S11	14,0
Software (Own account and mark-up) and entertainment, literacy and artistic originals	S11 / S12	16,5
Research and development	S11	65,2
Total		-575,90

4.5 The roles of direct and indirect estimation methods and of benchmarks and extrapolations

The calculation of domestic components from the income side is mainly based on the indirect estimation methods.

In detail,

- Wages and salaries and social contributions for the private sector, are based on annual economic surveys or other statistical sources in order to calculate the per employee income component. The latter is further multiplied by the number of employees which are obtained from the Labour Statistics.

- For the General Government, the data on wages and salaries as well as social contributions is collected from administrative data (direct method); the economic accounts of the Local government and the Semi government organizations provide the total amounts of wages and contributions, while regarding the allocation to NACE activities is carried out by the GFS section. The number of government employees is obtained by the National Treasury of the Republic while a check control and a reconciliation procedure is applied on the allocation done by the GFS section.
- Concerning taxes and subsidies, these are based on administrative data. The data is provided by the GFS section and CAPO.
- The consumption of fixed capital is calculated based on the PIM model. For more information, see chapter 4.12.
- Operating surplus/Mixed income are calculated as residual components.

As the results from annual economic surveys are available with a time lag of 18 months, for the current years, the quarterly National Accounts give the first estimate of income components. The Quarterly National Accounts estimates are based on an indirect model approach using data on Labour cost index and labour statistics data on employment.

Table 4.5.1: Summary table on data sources and methods used for the income approach

Compilation of GDP	Basis for NA Figures				Adjustments							
	Surveys and Censuses	Administrative Records	Combined Data	Extrapolation and Models	Conceptual		Exhaustiveness					
				CFC (PIM)	Allocation of FISIM	Other conceptual	N1	N2	N3	N5	N6	N7
GDP INCOME APPROACH												
Compensation of employees												
Non-Financial Corporations			✓								✓	✓
Financial Corporations			✓									✓
General Government		✓										
Households			✓								✓	✓
NPISH			✓									
Gross operating surplus												
Non-Financial Corporations			✓	✓	✓	✓					✓	
Financial Corporations			✓	✓		✓						
General Government			✓	✓								
Households			✓	✓			✓	✓	✓	✓	✓	✓
NPISH			✓	✓								
Mixed income												
Taxes on production and imports		✓										
Subsidies		✓										

4.6 The main approaches taken with respect to exhaustiveness

The Exhaustiveness adjustments on income components are described extensively in chapter 7. The exhaustiveness adjustments on compensation of employees, consist of the following: (a) payments in kind, (b) adjustments for tips, and (c) adjustments for misreporting. Adjustments are also implicitly made to mixed income and operating surplus for misreporting and under reporting.

Adjustments affecting wages

As already mentioned in sections 4.1 and 4.2, the NA concepts on wages and salaries are different from those of the economic surveys (business accounting concepts). Despite the fact that instructions are given to the enumerators as to include payments in kind in the annual surveys, NA identify the cases that this is not applied and proceed to exhaustiveness adjustments. According to the NA concepts, wages and salaries should comprise all remuneration in cash and in kind of all Cypriot and foreign nationals employed in resident producer units for the work they carry out.

Adjustments are carried out on wages due to payments in kind and tips which are not included in the annual surveys. A further adjustment is made on the wages of private households domestic servants, in order to cover unreported revenue.

Income in kind

The following table presents the exhaustiveness adjustments made, by NACE activities regarding the private use of company cars. For more information see chapter 7.

Table 4.6.1: Wages and salaries in kind (€ million)

NACE Rev.2	Private use of company cars (fuels consumed)	Private use of company cars (imputed rental)
C	7,7	7,1
D	0,2	0,2
E	1,4	1,3
F	3,9	3,5
G	12,0	10,9
H	4,0	3,7
I	1,4	1,3
J	0,7	0,6
K	0,3	0,3
L	0,2	0,2
M	1,8	1,6
N	2,3	2,1
Q	0,3	0,3
S	0,6	0,5
N7	36,8	33,6

Tips

Tips are added to compensation of employees in NACE Section I (Accommodation and food service activities) and H (Operation of taxis). The calculations made by NA for tips are described in detail in chapter 7. The following table presents the exhaustiveness adjustments made by NACE activities regarding tips.

Table 4.6.2: Tips (€ million)

Description	NACE Rev. 2	Amount	Exhaustiveness type
Taxis	NACE H	2,9	N7
Accommodation and food service activities	NACE I	42,7	N7
Total		45,6	

Misreporting

The following table presents the impact on wages and salaries as a result of misreporting adjustments which are made by the SBS colleagues responsible for the annual economic surveys. For more information see chapter 7.

Table 4.6.3: Misreporting (€ million)

Description	NACE	Amount	Exhaustiveness type
Restaurants	56	16,5	N6
Health	86	6,9	N6
Repairs	95	0,7	N6
Aesthetic, hairdressing	96	7,7	N6

An additional adjustment amounted to €7,5 million, is made on wages and salaries, by the NA section, due to misreporting. The adjustment is made for NACE Section T (Private Households employees), in order to cover unreported revenue.

Table 4.6.4: Misreporting (€ million)

Description	NACE	Amount	Exhaustiveness type
Private household employees	97	7,5	N6

Adjustments affecting the Operating Surplus/Mixed Income

Adjustments are made implicitly due to:

- own production-consumption in Agriculture and Hunting
- the underreporting and misreporting on education, health, aesthetic, hairdressing and repairs activities
- illegal activities (narcotics and prostitution). The producers of illegal economic activities are classified as self-employed and their income is classified as mixed income.
- employment reconciliation
- undeclared work on Horse Betting, Lawyers and Accountants
- VAT fraud
- employment reconciliation for Insurance (NACE K66)
- own account construction (NACE F)

The following table presents the exhaustiveness adjustments made by the statistics officers responsible for the annual economic surveys, which affect Operating surplus/Mixed income as a result of misreporting on NACE activities. For more information see chapter 7.

Table 4.6.5: Exhaustiveness adjustments (€ million)

Description	NACE	Amount	Exhaustiveness type
Own consumption: Hunting	NACE A	9,1	N3
Accommodation and food service activities	NACE I	16,5	N6
Aesthetic, hairdressing	NACE S	3,3	N6
Repairs	NACE S	0,3	N6
Health	NACE Q	3,0	N6
Own construction	NACE A	2,1	N7
Own consumption of agricultural products	NACE A	7,1	N7
Own consumption: Fishing	NACE A	0,2	N7

Further adjustments are made by the NA section. The following table presents the exhaustiveness adjustments made by the NA section, affecting the Operating surplus/Mixed income. For more information see chapter 7.

Table 4.6.6: Further adjustments (€ million)

Description	NACE	Amount	Exhaustiveness type
Rental of dwellings via online platforms	NACE I	36,5	N1
Education, Private lessons	NACE P	25,4	N1
Narcotics	NACE A	12,2	N2
Narcotics	NACE G	31,9	N2
Prostitution	NACE S	42,0	N2
Cottage industry	NACE C	0,6	N3
Sport fishing	NACE A	0,2	N3
Own construction	NACE F	10,1	N3
Insurance	NACE K	13,0	N5
Education, Private lessons	NACE P	49,4	N6
Aesthetic, hairdressing	NACE S	47,4	N6
Health	NACE Q	66,4	N6
Lawyers & Accountants	NACE M	348,7	N6
Horse Betting	NACE R	111,0	N6
Vat fraud :	NACE A	0,0	N6
	NACE C	1,8	N6
	NACE E	0,0	N6
	NACE F	27,7	N6
	NACE G	12,1	N6
	NACE H	1,9	N6
	NACE I	40,2	N6
	NACE J	0,3	N6
	NACE M	86,1	N6
	NACE N	1,5	N6
	NACE P	2,5	N6
	NACE R	4,6	N6
	NACE S	11,5	N6

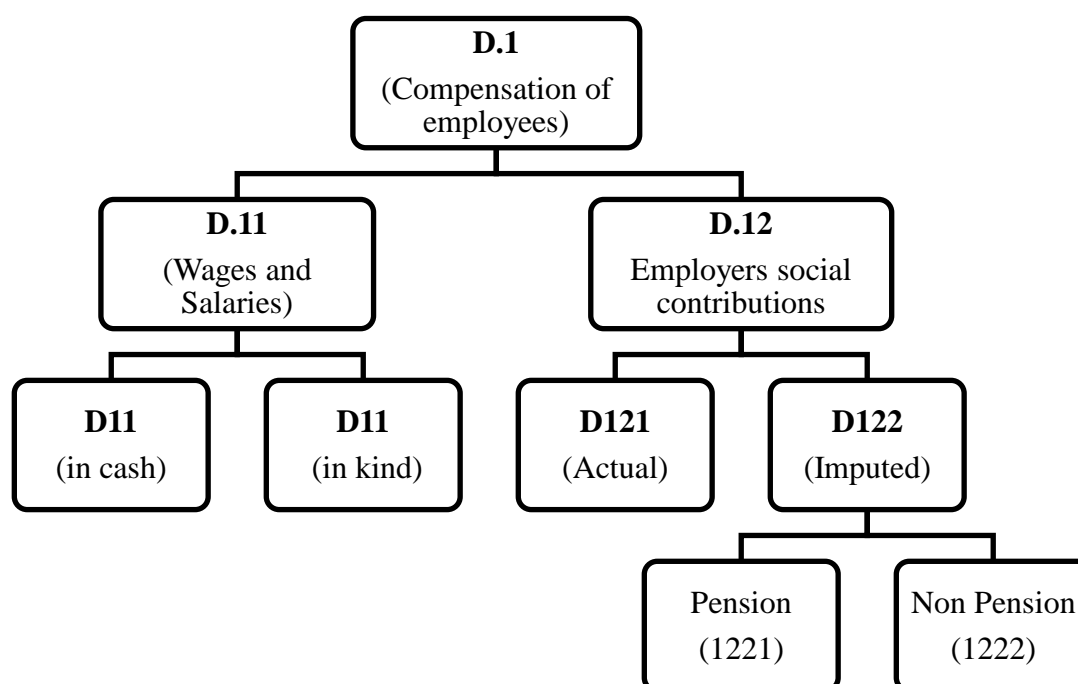
The following table presents the size of the exhaustiveness adjustments in the breakdown of income components:

Table 4.6.7: Exhaustiveness adjustments in the breakdown of income components

	N1	N2	N3	N4	N5	N6	N7	TOTAL
Compensation of employees								155,3
Non-Financial Corporations						31,8	114,8	146,6
Financial Corporations							0,6	0,6
General Government								0,0
Households						7,5	0,6	8,1
NPISH								0,0
Gross operating surplus								1026,6
Non-Financial Corporations						638,2		638,2
Financial Corporations								0,0
General Government								0,0
Households	61,9	86,1	19,9	0,0	13,0	198,0	9,5	388,4
NPISH								0,0
Mixed income								0,0
Taxes on production and imports								0,0
Subsidies								0,0
TOTAL	61,9	86,1	19,9	0,0	13,0	875,5	125,4	1181,9

4.7 Compensation of employees

According to ESA2010, compensation of employees (D1) includes all payment in cash and in kind received from an employer in return for the work carried out in the period concerned. It is comprised of gross wages and salaries (D11) and the employers' social contributions (D12).



The total compensation of employees is estimated as the sum of compensation paid to employees of the private sector (S11, S12, S14 and S15) and the compensation paid to employees of the General Government sector (S13). Additional adjustments are subsequently made to achieve exhaustiveness. The summary table, shown below, indicates the baseline data and the various adjustments, in order to derive to the final published figure.

Table 4.7.1: Summary Results for Compensation of employees (€ million)

	Compensation of employees		
	Total (D1)	Wages and Salaries (D11)	Employer's contributions to various funds (D12)
Combined data (baseline)	8.646,4	7.079,3	1.567,1
Private sector	6.282,8	5.411,6	871,1
General Government Sector	2.363,6	1.667,7	695,9
Misreporting in survey results		31,8	
Hotel & Restaurants (NACE 55-56)		16,5	
Health (NACE 86)		6,9	
Repairs (NACE 95)		0,7	
Aesthetic, hairdressing (NACE 96)		7,7	
Exhaustiveness adjustments		123,5	
<i>Income in kind:</i>		70,4	
Private use of company cars (fuels)		36,8	
Private use of company cars (rental)		33,6	
<i>Tips:</i>		45,6	
Tips (taxis)		2,9	
Tips (Hotel & Restaurants)		42,7	
<i>Misreporting:</i>		7,5	
Private households		7,5	
TOTAL (final)	8.801,7	7.234,6	1.567,1

Components of Compensation of employees by NACE

The following table presents the breakdown of Compensation of employees (D1), Wages and Salaries (D11) in cash and in kind and Employers Social Contribution (D12) by NACE.

Table 4.7.2: Compensation of employees by NACE (€ million)

	Compensation of employees (D1)	Wages & Salaries (D11)	Wages & Salaries (D11) in cash	Wages & Salaries (D11) in kind	Employers Social Contribution (D12)
TOTAL	8.801,7	7.234,6	7.103,8	130,8	1.567,1
A	92,8	75,4	75,4	0,0	17,4
B	19,1	16,2	16,2	0,0	2,9
C	635,4	547,1	532,3	14,8	88,3
D	97,7	68,5	68,1	0,4	29,2
E	66,0	51,4	48,7	2,7	14,6
F	471,6	407,6	400,2	7,4	64,1
G	1.129,1	1.001,1	978,2	22,9	128,0
H	430,2	368,9	358,4	10,5	61,3
I	656,7	580,4	535,1	45,3	76,2
J	405,8	348,6	347,3	1,3	57,2
K	998,6	817,7	817,0	0,6	181,0
L	29,7	26,3	25,9	0,5	3,3
M	666,4	583,3	579,9	3,4	83,1
N	188,2	166,5	162,1	4,4	21,7
O	1.187,9	838,2	838,2	0,0	349,8
P	884,8	657,3	657,3	0,0	227,5
Q	453,7	346,3	345,7	0,6	107,4
R	100,3	86,7	86,7	0,0	13,6
S	121,7	107,1	98,7	8,4	14,6
T	166,1	140,1	132,6	7,5	26,0

Estimation Procedure for Compensation of employees

The following table presents a numerical example of the steps for the estimation of compensation of employees for NACE Section G. A detailed description of the procedure follows.

Table 4.7.3: Example: The calculation of Compensation of Employees for NACE Section G (Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles), 2017 (€ million)

		Description	G	45	46	47
1		Compensation of employees (annual econ. surveys)		130,6	520,6	549,4
2		<i>Wages and Salaries of employees (annual econ. surveys)</i>		115,0	460,1	486,6
3		<i>Employers Social Contributions (annual econ. surveys)</i>		15,6	60,5	62,8
4		Number of employees (annual econ. surveys)		7.206	22.388	35.667
5	1÷4	Compensation per employee (annual econ. surveys)		0,0181	0,0233	0,0154
6		Number of Private Employees (employment statistics)		6.994	19.843	33.633
7	=5x6	Compensation of employees- Private sector	1.106,2	126,8	461,4	518,0
8	2÷1	Ratio of wages to compensation (annual econ. Surveys)		88,0%	88,4%	88,6%
9	=7x8	<i>Wages and salaries of employees- Private Sector</i>		111,6	407,8	458,8
10	=7-9	<i>Employer's Contributions- Private Sector</i>		15,2	53,6	59,2
11		Compensation of employees- General Government (GFS)	0,0	0,0	0,0	0,0
12		Ratio of wages to compensation for central government (GFS)		71%	71%	71%
13	11x12	<i>Wages and salaries-General Government (GFS)</i>		0,0	0,0	0,0
14	11-13	<i>Employer's Contributions (GFS)</i>		0,0	0,0	0,0
15		Exhaustiveness Adjustments for compensation of employees <i>Income in kind:</i> Private use of company cars (fuels) Private use of company cars (rental)	22,9	2,3	13,6	7,0
16	7+11+15	Compensation of employees (final figure) - D1 <i>of which</i>	1.129,1	129,1	475,0	525,1
17	9+13+15	Wages and Salaries- D11	1.001,1	113,9	421,4	465,8
18	10+14	Employer's contributions -D12	128,0	15,2	53,6	59,2

Private Compensation of Employees

As a general rule, the compensation of employees for the private sector, is estimated by the number of private sector employees at each NACE Division (NA employment figures) multiplied by the compensation per employee at each NACE (annual economic surveys). It should be noted that all calculations are performed at a two digit NACE level. The procedure can be described by the steps provided below:

- *1st step:* For each NACE activity, the survey data for employment, wages and salaries and social contributions is used to calculate the average compensation per employee. This is performed for all NACE activities at two-digit level.
- *2nd step:* The number of private employees is implicitly estimated by subtracting the General Government employees (data source is the National Treasury of the Republic) from total employees (NA employment figures).
- *3rd step:* The average compensation per employee (step 1), is subsequently multiplied by the number of private sector employees (step 2), in order to estimate compensation of employees for the private sector.
- *4th step:* Exhaustiveness adjustments are added to wages and salaries, mainly due to income in kind and tips. A detail description of all exhaustiveness adjustments on compensation of employees is described in section 4.6 and chapter 7.

NACE activities for which a special treatment is required

An alternative treatment is applied to NACE Sections A (Agriculture), K (Financial and insurance activities) and T (Activities of households as employers), which are not covered by the annual economic surveys.

- **Agriculture & Fishing (NACE A)**

For the Agricultural sector, the data sources are the Agricultural Census of 2016, the Labour Statistics as well as administrative sources. In the Census of Agriculture there is detailed information regarding permanent and casual employees and the total hours worked for each category.

For NACE 01, the hours worked provided by the Census are used, in order to estimate employment in full time equivalent terms. This figure is then multiplied by the average monthly earnings provided by the Labour Statistics, in order to calculate the compensation of employees. For NACE activities 02 and 03, the employment figures from the Social Security Services records are used.

These employment figures are multiplied by the average monthly earnings provided by the Labour Statistics.

- **Financial and insurance activities (NACE K)**

The general approach is also applied for NACE Section K, but since there are no survey results to get the compensation per employee, the average monthly earnings are used, which are published by the Labour Statistics instead (which are in turn based on the Social Security Services records). More specifically, for each one of the NACE Divisions 64, 65, 66, the below steps are followed:

- *Step 1:* The average monthly earnings are multiplied by thirteen months to get the average annual earnings.
- *Step 2:* The annual earnings are multiplied by the number of private employees provided by the Labour Statistics in order to derive the Wages and Salaries (D11).
- *Step 3:* The ratio of employers contributions over wages and salaries is used ($D12/D11$), which is derived from the Labour Cost Survey, in order to estimate the respective Employers Social Security Contributions (D12).
- *Step 4:* The results in steps 2 and 3 are added in order to obtain the Total Compensation of employees figures.
- *Step 5:* Exhaustiveness adjustments are added to wages and salaries, due to income in kind and tips.

- **Private household (NACE T)**

For the assessment of employees' remuneration in the domain of domestic services, the annual economic survey results for domestic servants (Services Survey) are used. They provide information for the monthly compensation per employee, which includes wages and salaries, employers' social contributions and income in kind (food, accommodation, travel tickets and sundries). The number of employees used in the survey is obtained from the Social Security Services of the Labour of Ministry and Social Insurance. It is mentioned that due to a regulation regarding the employment of foreign domestic servants a special permit is granted to households fulfilling the necessary requirements. The number of employees is multiplied by the per employee survey results in order to obtain total gross wages and salaries, to which total employers' social contributions are then added.

An exhaustiveness adjustment is made to Wages and Salaries (D11) for unreported revenue for domestic household services based on expenditure provided by the Household Budget Survey. For more information, see chapter 7.

Measures taken to ensure full coverage of employees

NA section ensures that compensation of employees includes the remuneration of both resident and non-resident employees working for resident institutional units. This is achieved by using the total number of NA employees (including both resident and non-resident), which is the outcome of the employment reconciliation framework. For more information, see chapter 7. Finally, no further adjustments are needed due to thresholds for income taxes, since CYPSTAT does not use such an administrative source.

General Government Compensation of employees

The compensation of employees for the public sector is produced on the basis of the final accounts of the General Government sector and the analysis of these figures by NACE Division is made by the GFS section. A reconciliation is made based on data obtained from the National Treasury of the Republic. There are two administrative sources used by the GFS section, for the estimation of data; namely (i) the National Treasury of the Republic and (ii) financial statements for local government and semi-government organizations (these are classified in the General Government Sector).

Direct data for the breakdown of the compensation of employees into wages and salaries and employers' social contributions are available from the Government Budget (Central Government Subsector). For the Semi-Government and Local-Government employees though, the total amount of compensation of employees is only available. In order to split this amount, the ratio D11/D1 is used, which is applicable for the Central Government and is estimated around 71% for 2017.

A summary table for the General Government sector for the compensation of employees, wages and salaries, actual and imputed social contributions for 2017 is provided below:

Table 4.7.4: Compensation of employees for the General Government Sector (€ million)

	General Government	Central Government (Budget)	Central Government (Semi-Government)	Local Government
D1	2.363,7	2.034,8	205,5	123,4
D11	1.667,7	1.435,7	145,0	87,1
D12	695,9	599,1	60,5	36,3
D121	263,7	227,0	22,9	13,8
D122	432,3	372,1	37,6	22,6

4.7.1 Wages and Salaries

Similar to total compensation of employees, wages and salaries (D11) is the sum of the private sector part and the General Government sector part.

Wages and salaries (D11) for the private sector is derived using the ratio of wages and salaries over total compensation ($D11/D1$), which is obtained from the annual economic surveys, multiplied by the total compensation for the private sector. The employers contributions for the private sector (D12) is then derived by the ratio of the contribution on compensation ($D12/D1$) which is obtained from the annual economic surveys, multiplied by the total compensation estimates, or as a residual item ($D1 \text{ minus } D11$). Please note that these estimates are made at the two digit NACE level.

Wages and salaries (D11) for the General Government sector is the sum of wages and salaries of employees in the central government, plus the respective wages of the semi-government and local government. Wages and salaries for the central government is provided directly by the National Treasury of the Republic, while for the semi-government organizations and local government, only the total compensation of employees is available. In order to derive the breakdown into Wages and Salaries and Employers Social Contributions, the ratio derived from the data on Central Government Employees is used. More specifically, the ratio of wages and salaries to compensation of employees (ratio of D11 to D1) is around 71%. The final result for D11 is thus derived from a multiplication of the total compensation of public employees by 71% while D12 for government employees is a residual number ($D1 \text{ public minus } D11 \text{ public}$).

4.7.2 Employers' social contribution

Employers Social Contributions of private sector

The contributions of the private sector consists of actual contributions and these are paid by employers in order to ensure that employees are entitled to social benefits. As already mentioned in section 4.7.1, the employers contributions by NACE activity are based on the ratio of actual social contributions over total compensation, which is provided by the annual economic surveys by NACE industry. According to the surveys definition used, data on employers' contributions to various funds include social insurance, provident and pension funds, medical, redundancy and other funds.

Employers Social contributions of the government sector

Social contributions of the government sector, consists of actual and imputed social contribution (data source: GFS section). Actual social contributions (D.121) include payments to insurance

schemes (Social Insurance) and other social security funds. The table below shows the description of actual social contributions included in the central government data for 2017 (Budget):

Table 4.7.5: Actual social contributions (D121), Central government (Budget), 2017

DESCRIPTION
Contribution to Central Holiday Fund
Contribution to Defence Fund
Contribution to Human Resources Dev. Fund
Guarantee Value Scheme of Gov. Hourly Paid Staff
Medical Scheme Contribution
Provident Fund Contribution
Social Cohesion Fund Contribution
Social Insurance Fund Contribution
Termination of Employment Scheme Contribution

Employers' imputed social contributions (D.122) represent the counterpart to other social insurance benefits paid by the government to its employees without involving an insurance company or fund. Employers' imputed social contributions are divided further into two categories: D1221 which consist of employers' imputed pension contributions (civil servants pensions) and D.1222 which consists of employers' imputed non-pension contributions (includes mainly the lump-sum payments paid to government employees).

The table below shows the description of imputed social contributions included in the central government data for 2017 (Budget):

Table 4.7.6: Imputed social contributions (D122), Central government (Budget), 2017

DESCRIPTION
Pensions Thirteenth Salary Officials of the Republic
Pensions Thirteenth Salary of Educational Staff
Pensions Thirteenth Salary of State Officers
Pension Thirteenth Salary of Police and Fire Service Staff
Pension Thirteenth Salary Cyprus Army Staff
Officials of the Republic
Pensions Police and Fire Service Staff
Police and Fire Service Staff
Educational Staff
State Officers
Casual Staff
Cyprus Army Staff
Government Hourly Paid Staff
Supplementary Pension Deduction for Civil Servants

4.8 Taxes on production and imports

Table 4.8.1: Taxes on production and imports for 2017 (€ million)

D2	Taxes on Production and imports	3.034,0
D21	Taxes on Products	2.632,3
D211	Value added type taxes (VAT)	1.720,3
D212	Taxes and duties on imports excl. VAT	50,5
D2121	Import Duties	33,5
	<i>of which taxes paid to the EU (traditional own resources)</i>	30,1
	<i>of which taxes paid to Government</i>	3,4
D2122	Taxes on imports	17,0
D214	Taxes on products, except VAT and import taxes	861,5
D29	Other taxes on Production	401,7
	<i>of which taxes paid to the EU (banks' contribution to Single Resolution Fund)</i>	18,9

The following table provides the analysis of Other taxes on Production (D.29).

Table 4.8.2: Analysis of Other taxes on Production

Other taxes on Production for 2017	(€ million)
Taxes on land, buildings or other structures	43,7
Taxes on the use of fixed assets	0,8
Total wage bill and payroll taxes	198,3
Business and professional licences	90,4
Taxes on pollution	11,3
Other taxes on production n.e.c.	57,2
TOTAL	401,7

Taxes on production and imports are provided by the GFS section. Other taxes on production (D29) and Taxes on products, except VAT and import taxes (D214) are allocated to the individual NACE two-digit level.

The analytical level of information is available from the FIMAS. The usage of the FIMAS allows the identification of different cases of taxes that can be examined and classified in a much more distinct and efficient way than before the introduction of the system, where a number of cases were grouped under a limited number of headings making it more difficult to achieve the required classification.

The classification rules applied to taxes on products follow the description as it is laid out in the ESA 2010 manual and the Manual of Government Deficit and Debt (MGDD). There are no borderline cases. Cash receipts are used for the calculation of taxes on products. These cash receipts are time-adjusted in order to ensure the application of the accrual time of recording principle to the estimates of taxes on products (including VAT). The adjustment is based on the average difference between the activity and the cash tax receipt which is two months. Tax (including VAT) amounts unlikely to be collected are not recorded/applicable in Cyprus. Only cash receipts are reported.

4.9 Subsidies

The following table presents total subsidies, broken down into Subsidies on products (D31) and Other subsidies on Production (D39):

Table 4.9.1: Subsidies, 2017 (€ million)

D3	Subsidies	122,5
D31	Subsidies on products	60,3
	<i>of which received by EU (through CAPO- Cyprus Agricultural Payments Organisation)</i>	5,2
	<i>of which received by Government</i>	55,1
D39	Other subsidies on production	62,2
	<i>of which received by EU (through CAPO)</i>	62,2

A detailed analysis of subsidies on products (D31) by NACE Division is shown in the table below:

Table 4.9.2: Subsidies on products (D31) by NACE, 2017 (€ million)

NACE	Subsidy description	2017
1	Other Agricultural and Veterinary Subsidies	11,0
75	Subsidisation of Veterinarians	0,1
86	Subsidies of pharmaceutical products	0,2
49	Public passenger Transport	43,8
Grand Total	TOTAL excluding CAPO	55,1
	CAPO	5,2
	TOTAL including CAPO	60,3

4.10 Gross operating surplus

Gross operating surplus is a residual item in the income approach.

4.11 Mixed income

Mixed income is treated as a residual in conjunction with gross operating surplus. It is not recorded and calculated separately as original data.

4.12 Consumption of fixed capital

Methodology

According to ESA 2010 (paragraph 3.140): “Consumption of fixed capital shall be calculated for all fixed assets (except animals), including intellectual property rights, major improvements to land and costs of ownership transfers associated with non-produced assets”.

ESA 2010 (paragraph 3.141) also states that “Consumption of fixed capital is different from the depreciation allowed for tax purposes or the depreciation shown in business accounts. Consumption of fixed capital is estimated on the basis of the stock of fixed assets and the expected average economic life of the different categories of those goods. For the calculation of the stock of fixed assets, the PIM is applied whenever direct information on the stock of fixed assets is missing”.

In order to achieve these calculations it is necessary to estimate first the capital stock of Cyprus, in accordance with the harmonisation process of Eurostat directives, by using the PIM.

The PIM model requires the following data input:

- Time series of investment data
- A survival function
- Lifetime assumptions

The model utilizes an estimation procedure which incorporates the following steps:

- Use of price indices according to the inputs of investment data.
- Conversion of the data from current prices into current replacement cost.
- Estimation of the survival function (utilizes the average lifetimes and dispersion factors by type of asset).
- Computation of Gross capital stock, retirements, capital consumption, Net capital stock.

Data requirements

The basic prerequisite for the calculation of capital stock according to the PIM is the availability of long time series of investment data. These investment series should be as long as the average lifetime of capital goods.

In Cyprus due to the existence of a relatively good statistical database, it was not difficult to obtain data on investment for fixed assets, as back as 1960 for all the main categories of assets; namely Construction, Machinery, Transport.

This was achieved after conducting a detailed examination of all the available NA data from the year 1960 onwards. Prior to year 1960 no information existed on a systematic statistical basis, apart from very aggregated fixed capital formation figures scattered in the various English colonial official documents.

The database from 1960 onwards provided rich information for the value of the investment, both at current (historical) and constant prices, and was also classified according to economic branch (ISIC classification) in Cyprus. The main problem at that stage was the reclassification of the old figures 1960-1980 (9 branches) into the present form of 21 branches (NACE Rev.2). This was achieved with the detailed examination of the annual survey reports of each branch and the establishment of proper conversion keys from ISIC to NACE. In the case of information that was hidden (aggregated) or non-existent, the structure of the subsequent years was used in the allocation process. As a general rule, the total investment figure for each asset category in the economy for a particular year remained unchanged. Thus, the disaggregation procedure was guaranteed not to produce additional estimation errors for the total economy.

Since a 50-year investment series was considered to be more than satisfactory, at least for the categories of Machinery and Transport, the data for these categories was only expanded up to the year 1950. Consequently all the effort was concentrated on expanding the database for Construction. In order to overcome this problem an expansion of the existing investment series was attempted using a pattern of the international business fluctuations.¹ As a result a long time series for Construction investments, from 1925 to present, at both “historical” and constant prices was compiled.

In recent years, the three main asset groups were expanded to include new categories: Thus, Construction was furthermore analysed and information about dwellings, non-residential buildings, roads and bridges, other civil engineering were presented separately. Machinery was decomposed into machinery and ICT. Transport was divided into motor vehicles, airplanes and ships, whereas one more asset was introduced, namely plantations. Finally, the category of intangible assets was also included, comprising of research and development (R&D), software, mineral exploration and entertainment, literary and artistic originals.

¹ P. Samuelson, Economics (Singapore: McGraw-Hill, 1973), p. 250.

It should be noted that major improvements are part of gross fixed capital formation and hence are implicitly included in the estimation of capital stock and capital consumption. The same argument holds for the ownership transfers.

The conversion of the investment time series from current (historical) to current replacement prices was achieved by using various price indices as inflators.

The Survival Function

In the capital stock calculations there is a direct reference to the distribution of the assets' lifetime; therefore a density function of a statistical distribution is regarded to be a suitable mathematical tool for the purposes of the PIM.

Capital stock experts recommend that for the estimation of the survival function of a capital vintage some sort of bell-shaped function have to be used. This is required since a capital vintage of a certain asset, consists of the sum of various capital goods for which different lifetimes can be expected.

Empirical evidence for motor vehicles clearly reveals that the distribution of scrapping follows a symmetric shape. Moreover, the bell-shaped function reduces the range of errors efficiently. Tests of different survival functions revealed that the specific type of function has only limited effects on the results as long as it is a bell-shaped function².

For the purposes of the present calculations the log-normal function recommended by Eurostat was applied. This was necessary in the absence of any empirical evidence in Cyprus, regarding the values of the two parameters of the density function. It is mentioned that the GFCF time profile for the retiring and the new vintages is sufficiently stable and GFCF levels are sufficiently similar to ensure that there is no significant impact on CFC.

The log-normal function

$$f(x) = \frac{1}{x \cdot \sigma_1 \cdot \sqrt{2\pi}} \cdot e^{-\frac{(\ln x - \alpha_1)^2}{2\sigma_1^2}}$$

Density function with $E(x) = e^{\alpha_1 + \frac{\sigma_1^2}{2}}$ and $Var(x) = e^{2\alpha_1 + \sigma_1^2} \cdot (e^{\sigma_1^2} - 1)$

$f(x)$ = Probability for retirement of capital after a lifetime of x years

α_1 = mean of log-normal distribution

² H. Lutz, Estimates of Capital Stock by Industries in the Federal Republic of Germany (Review of Income and Wealth, 1977), Series 27, No. 1.

σ_1 = standard deviation of the log-normal distribution

The function always starts with a zero probability in the investment year. A cut is necessary on the right side of the distribution to exclude trifling values from the calculations and therefore no simultaneous exit assumption has been used. Disadvantages of the distribution are the complicated economic interpretation of the parameters of the distribution and the requirement of longer time series of investment for the same dispersion factor.

In the present model **the dispersion factor** for buildings is **2.0**, for machinery, transport equipment and computers **2.5**, aircrafts **3.0**, plantations **2.0** and for ships **3.0**, while for intangible fixed assets the dispersion factor is **2.5**, except the sub-category of mineral exploration which is **2.0**.

Lifetime Assumptions

The consumption of fixed capital is calculated using the straight line method. As it was already mentioned, the crucial parameter of the survival function is the estimation of the average length of time for each category of assets.

In principle a priori knowledge of the age composition of fixed capital assets provides useful information in capital stock calculations, since it can be used in the establishment of technically correct expected lifetime for those assets. In order to obtain such knowledge, it is necessary to either make ad-hoc surveys on specific types of capital equipment or to collect technical information on their behaviour.

The use of depreciation rates for tax purposes to be served as an indicator for the expected lifetimes were abandoned since these rates imply considerably shorter lifetimes, therefore some kind of assumptions for their modification are required in order to arrive at a more "realistic lifetimes".

For further categorization of fixed assets, information on their life expectancy was collected from specialists. For buildings and other construction works information was provided from engineers and constructors. For machinery and transport information was obtained from the enterprises which use the respective capital assets. For plantation, the average life assumption was based on specialized information on the type of tree in conjunction with their number from the Census of Agriculture. The lifetime assumptions were investigated in the recent years and updated on a continued basis, verifying the average life assumptions that were made. In 2014 the life assumption of software was set at 9 years based on computer estimates while Mineral Exploration service life was set at 36 years based on information collected from private companies engaged on this activity. Moreover, for the lifetime assumptions of ships, since the depreciation of the ships of the SPEs ship-owning companies has a significant impact on the GNI, NA examined the service life for each type of

ship in order to better estimate this depreciation value. The life assumption of ships was reviewed to 23-43 years in 2016, based on information from the IHS Fairplay database, which is used in NA for the determination of the economic owners of the ships. The actual number of years that a ship is in service until it retires was available for 11.436 cases for the years 2010-2016. The average service life was extracted by type of ship. The following table shows the main categories of retired ships that are recorded in the IHS Fairplay database:

Ship Type	Average Number of Years (Service Lives)	Number of Ships
General Cargo Ship	32	2.841
Bulk Carrier	27	2.457
Container Ship (Fully Cellular)	23	942
Fishing Vessel	32	451
Stern Trawler	28	355
Chemical / Products Tanker	27	265
Products Tanker	30	258
Tug	43	250
Passenger / Ro-Ro Ship (Vehicles)	37	250
Ro-Ro Cargo Ship	32	235
Crude Oil Tanker	22	218
Refrigerated Cargo Ship	29	211
Trawler	40	173
Vehicles Carrier	29	142
Crude / Oil Products Tanker	24	134
Anchor Handling Tug Supply	32	133
LPG Tanker	30	131
Chemical Tanker	30	102
Products Tanker	32	92
Passenger Ship	38	90
Other Ships	31	1.706
Grand Total	31	11.436

The average lifetime for each asset category is presented below:

Table 4.12.1: Life assumptions for assets

Asset	Average Life
Dwellings	75
Roads	55
Non-residential Buildings	42-75
Other civil engineering	75
Machinery	11-19
Computers	5
Motor vehicles	10-18
Airplanes	30
Ships	23-43
<i>of which: Bulk Carrier</i>	27
<i>Containers</i>	23
<i>Tankers</i>	30
<i>Tugs</i>	43
<i>General Cargo</i>	32
<i>Other</i>	31
Plantations	24
Intangible assets	9-36

Weapon systems are not presented separately in the GNI Inventory due to confidentiality reasons. Regarding the lifetime assumptions of weapons systems, these are divided into three different categories based on their service life assumption. For example, tanks and helicopters have an average lifetime of 30 years, the military vehicles and the heavy weapons 20 years and the radars and lighter weapons 15 years. These service life assumptions were made by the military personnel of the Ministry of Defence.

The consistency of the GFCF time series which are used for the estimations of the capital stock through the PIM, is ensured also for the early years for all type of fixed assets. It is mentioned that during the estimation process of the PIM there is no distinction between market and non-market producers for other structures (AN.1122) and land improvements (AN.1123). Regarding the estimation of land improvements (AN.1123) in the PIM, these are included in the GFCF estimates and in the construction output. They are mainly classified in the asset category "Civil engineering projects". Since the land improvements are implicitly included in the estimation of GFCF, they are also included in the PIM calculations. The average lifetime of the land improvements is the same with the one of the respective asset (i.e. other structures) that they are classified in. It is mentioned that no additional information was available for the lifetime assumptions in the categories of other structures (AN.1122) and land improvements (AN.1123). Hence, the lifetime assumptions for the specific categories remained unchanged.

In relation to the distinction of the market and non-market sectors in PIM, it should be noted that for all Government NACEs, except NACE O, this breakdown was achieved through the use of a ratio of the average share of non-market sector in GFCF for a 5 year moving period. Thus, the estimates for consumption of fixed capital are made for all relevant NACE activities for S.13. Furthermore, no single public infrastructure category exceeds 15% of Gross Capital Stock. However, the asset category “roads and bridges” which represents around 5% of Gross Capital Stock is treated separately in the PIM model.

The main components of other structures in the category AN.1122 (i.e. earthworks, foundations surface layers for roads etc.) are not distinguished in the PIM. Furthermore, the service lifetime assumption used for roads and bridges is 55 years and no further separate lifetimes for the above components are used.

Treatment of the invasion effects

As a result of the Turkish invasion in mid-1974, and the subsequent inaccessibility of the northern part of the island (due to the occupation of nearly 40% of land), an enormous amount of capital stock was either destroyed or is still inaccessible for the estimates of the economy.³

In order to cope with the problem of losses the following treatment should be adopted in the calculations:

- a) For both practicality and simplicity reasons, the assumption that the invasion took place as an event at the end of 1974, should be made.
- b) A decision should be taken on the application of the same treatment for all the invasion effects irrespectively of these being actual war damages or losses of capital equipment resulting from the occupation.
- c) The losses resulting from the invasion should be treated as catastrophic losses.

The information on the approximate level of losses of capital assets in each economic branch were derived from official reports of that period and other academic sources.⁴

These losses were deducted from the corresponding capital stock (as catastrophic losses) in the year 1974, for all categories of assets in each economic branch (exogenous treatment). Then on the

³ Data on investment before 1974 refer to the whole of Cyprus, whereas the data from 1975 onwards refer to the investments made in the government controlled areas only.

⁴ Public Information Office, The economic consequences of the Turkish invasion, (Nicosia: Government of Cyprus, 1974)

G. Zeitounisian, The economic impact of the Turkish invasion in the Republic of Cyprus (University of Salonica: Research paper, 1975)

remaining capital stock the annual GFCF was added. Thus, the capital stock from year 1975 onwards that resulted from the PIM is “corrected” from the invasion effects.

Consumption of Fixed Capital by institutional sector

For the estimation and the allocation of CFC into institutional sectors the indirect approach was used. In the ESA 2010 framework, institutional units that are resident in the economy are grouped into the following types of sectors: Non-financial corporations (S.11), Financial corporations (S.12), General government (S.13), Households (S.14) and (S.15) for the Non-Profit institutions serving households (NPISH). The institutional units that are not considered residents of the national economy are grouped separately as Rest of the World (S.2).

Consumption of Fixed Capital for non-market producers

Regarding the estimation of CFC for sector S.13, all Government NACEs, except NACE O, the distinction of the market and non-market sectors in PIM is achieved through the use of a ratio of the average share of non-market sector in GFCF for a 5 year moving period.

Moreover, the CFC for sector S.15 is actually obtained from the annual economic surveys, since the CFC from the PIM model is based on the above mentioned assumption. The CFC survey results provide also better information for the NACE activity, therefore it was decided to use the CFC as obtained from the economic surveys, instead the results for CFC from the PIM.

The Consumption of fixed capital by institutional sector is shown in the table below:

Table 4.12.2: Consumption of Fixed Capital by institutional sector, 2017

ESA 2010 Code	Consumption of Fixed Capital by Institutional Sectors (€ million)	%
S.11	1.085,5	44,2
S.12	58,9	2,4
S.13	448,4	18,3
S.14	836,5	34,1
S.15	27,1	1,1
TOTAL	2.456,4	100

The Consumption of fixed capital by NACE Section is shown in the table below:

Table 4.12.3: Capital consumption, by section, 2017

Net of invasion losses (at current replacement cost)

	Section	(€ million)
A	Agricultural, Fishing	48,2
B	Mining	27,4
C	Manufacturing	141,3
D	Electricity	135,2
E	Water supply	54,8
F	Construction	65,6
G	Trade	146,8
H	Transport	327,3
I	Accommodation & Food	99,3
J	Communication	140,4
K	Financial & Insurance	58,9
L	Real Estate	2,6
	HOUSING	663,7
M	Professional, Scientific	52,1
N	Administrative, Support	15,5
O	Public	295,0
P	Education	103,0
Q	Health	37,4
R	Arts, Entertainment	27,1
S	Other service activities	14,7
T	Households employers	0,0
	Total	2.456,4

Consumption of Fixed Capital for ships

Regarding the estimation for the CFC on ships, this affects only the S.11 sector and it was implemented by applying the PIM, by using for each category of ship the different lifetime assumption. The total amount for CFC on ships for 2017 is estimated at €254,0 million (1,3% impact on GNI).

The recording of the Net Operating Surplus rather than the Gross Operating Surplus has an impact of around 1,3% of GNI. In addition, apart from the depreciation, the GNI is also impacted by the Gross Tonnage Tax which should further reduce the Net Operating Surplus by €3,1 million.

The corresponding values for CFC by type of ship for 2017 are shown in the table below:

Table 4.12.4: Consumption of Fixed Capital by type of ship, 2017 (€ million)

Type of ship	Consumption of Fixed Capital by type of ship
Bulk carriers	151,3
Containers	42,5
Tankers	16,4
Tugs	13,1
General Cargo	9,7
Other	21,0
TOTAL	254,0

The Consumption of fixed capital by type of asset is shown in the table below:

Table 4.12.5: Capital consumption, by fixed assets, 2017

Net of invasion losses (at current replacement cost)

Assets	(€ million)
Housing	663,7
Buildings	388,1
Roads	94,6
Airports & Harbours	17,3
Machinery	667,9
ICT	80,5
Motor vehicles	63,0
Aircrafts	18,4
Ships	254,0
Plantations	3,2
Intangible assets	205,6
Total	2.456,4

A summary of the Consumption of fixed capital is presented in the following table, by category of asset:

Table 4.12.6: Summary table of consumption of fixed capital, 2017

Summary	(€ million)
Buildings	1.163,8
Machinery (incl. ICT)	748,4
Transportation	335,4
Plantations	3,2
Intangible assets	205,6
Total	2.456,4

CHAPTER 5: THE EXPENDITURE APPROACH

5.0 GDP according to the expenditure approach

The GDP in Cyprus is calculated from the production, the expenditure and the income approach. The two independent approaches, which the GDP level is determined are the production and the expenditure approach. The breakdown of GDP by category of expenditure is presented in the table below.

Table 5.0.1: Breakdown of Gross domestic product by expenditure category, 2017

	2017 (€ million)
Total final consumption expenditure	16.150,1
- Household final consumption expenditure	12.941,8
- NPISH final consumption expenditure	207,4
- General government final consumption expenditure	3.000,9
Gross capital formation	4.193,0
- Acquisitions less disposals of produced fixed assets	4.223,9
- Changes in inventories	-15,8
- Acquisitions less disposals of valuables	-15,2
Balance of exports over imports	-97,8
Exports of goods and services	14.969,3
less Imports of goods and services	15.067,1
Gross domestic product (at market prices)	20.245,3

5.1 The reference framework

National Accounts Main Aggregates team is responsible for the collection and processing of data which is necessary for the production of the annual National Accounts (NA) estimates concerning the expenditure approach. For this purpose, the estimates for each expenditure component of the GDP are organized and carried out independently, through specific data management files. These estimates are validated and compared with the corresponding figures from the production approach of GDP.

The main data sources for the compilation of the GDP from the expenditure side are based on statistical surveys conducted by CYSTAT (annual economic surveys and Household Budget Survey (HBS) and administrative data (FIMAS data, the financial statements of Local Government, Semi-Government and Social Security Funds, Foreign Trade Statistics and the Balance of Payments (BoP)

statistics). In addition, conceptual adjustments are made in order to ensure the transition from private to national accounting concepts and finally exhaustiveness adjustments are applied for the completeness of the coverage of economy. Balancing procedure through the Supply and Use Tables (SUT) framework is the last step before the finalization of GDP estimates.

Regarding the data sources and their usage in the compilation process of expenditure components of GDP, these are described below in detail:

Household final consumption expenditure (HFCE)

The estimation of the final consumption expenditure by households is mainly based on the results of the HBS, which is being conducted by CYPSTAT at a 5-year interval. Data for 2017 is extrapolated based on the results of the HBS of 2015.

NPISH final consumption expenditure

The data used for the valuation of the final consumption expenditure by non-profit institutions serving households (NPISH) is obtained from the results of annual economic surveys conducted by CYPSTAT.

Government final consumption expenditure

The main sources for the computation of the government final consumption expenditure are the FIMAS (Financial Information Management Accounting System), which provides data for the Central Government, as well as the financial statements for the Local Government, Semi-Government and Social Security Funds.

Acquisitions less disposals of produced fixed assets

Regarding acquisitions less disposals of produced fixed assets, there are several sources for the estimation of Gross Fixed Capital Formation (GFCF), depending on the type of asset (AN code). The main sources are shown in the table below:

Table 5.1.1: Main sources, acquisitions less disposals of produced fixed assets

Acquisitions less disposals of produced fixed assets	Surveys & Censuses	Administrative data		
		Foreign Trade Statistics	FIMAS	Ministry of Defence
Dwellings, other buildings and structures and non-residential buildings	✓			
Machinery and other equipment, ICT equipment and vehicles	✓			
Military expenditure				✓
Aircrafts		✓		
Ships		✓		
Cultivated biological resources	✓			
Research and Development (R&D)	✓			
Mineral exploration and evaluation	✓			
Computer software and entertainment, literary or artistic originals	✓			
Public expenditure for all fixed assets			✓	

Changes in inventories

The data used for the valuation of changes in inventories is obtained from the annual economic surveys conducted by CYSTAT.

Acquisitions less disposals of valuables

Information is obtained from the Foreign Trade Statistics section and from the annual economic surveys.

Exports and Imports

The values of exports and imports of goods are obtained from the Foreign Trade Statistics section and the values of exports and imports of services are obtained from the Central Bank of Cyprus (Balance of Payments data).

5.2 The borderline cases

5.2.1 The borderline cases for HFCE

The inclusion of the following borderline cases in HFCE is ensured as follows:

- Dwelling services produced by owner-occupiers are included in the HFCE as the value of the imputed rent of the owner occupied dwellings. For more details, see chapter 3.18.
- Income in kind received by employees are goods and services or any other benefits that are provided by the employers either at no cost or at a reduced price. The employees and their families can use these benefits when and as they please. These benefits are considered as extra income for the employees. The most common benefits are: meals and drinks, including the ones consumed in business trips, housing services in company or rented premises, uniforms and any other special apparel that the employees often choose to wear both at and off work. In addition, they may be provided with transport services or any other goods and services that are aimed for personal use e.g. sports facilities, entertainment, vacation, parking space, daycare services, payments made by employers to work councils or similar bodies, bonus shares distributed to employees, etc.

Household consumption includes a wide range of goods and services received by households as income in kind and are recorded through the HBS. Nevertheless the use of company cars for private purposes is not recorded in the HBS and thus an exhaustiveness adjustment needs to be made. These estimates are also included, as income in kind, in the production and income approaches to GDP.

Estimates of the value of the use of company cars for private purposes should be part of this component of household consumption. The cars are, in effect, being treated as if they were the subject of financial leases to households, though the company may acquire the car under a financial lease, the private use is an imputed rental from the company to the household. The value of the imputed rental of the company cars is estimated at €33,6 million for 2017. In addition, an exhaustiveness adjustment is made in order to include the value of fuels consumed for the private use of company cars. This value is estimated at €36,8 million for 2017. For more details, see Chapter 7.

Income in kind from food and other agricultural goods produced by unincorporated enterprises owned by households is recorded in agricultural sector and is included in the household final consumption expenditure. The production of agricultural products for own final consumption is

covered by the use of specific questions in the Agriculture Survey questionnaire. This kind of production for own final use comprises mainly of agricultural and livestock products and a relatively small amount of fishery goods. For more details, see Chapter 7.

All the expenses paid by the households, either for materials or expenses for services provided for the repair, are also included in each COICOP category of consumer durables in the HFCE.

- HFCE of any goods purchased under hire-purchase is not common in the case of Cyprus.
- The estimates of household consumption are net of sales of second-hand goods by households. In the case where sale and purchase is directly between households, the transactions net out to zero. However, where purchases are made from dealers, the figures include the value of the dealers' margins. Where transactions are with other sectors, such as the purchase of second-hand company car, the full value of the purchase is recorded in household consumption (while the sale value would have been included as negative fixed capital formation in the corporations sector).
- FISIM used for final consumption purposes by households, concerns deposits and loans of households as consumers. The relevant value is explicitly added to the final estimate of HFCE. It should be noted that FISIM on loans of household as owners of dwellings and as owners of unincorporated enterprises is treated as IC. For more details, see chapter 3.17.1.
- Due to the fact that the HBS data refers to the insurance premiums, NA produces an explicit estimate in order to calculate the implicit service charge attributed to households. This is achieved by using data on insurance Output (premiums earned *plus* premiums supplements *minus* adjusted claims incurred) by sector. Regarding pension funding services, estimates are based on the implicit service charge and these are included in HFCE. For more details, see chapter 3.17.2.
- Direct payments from insurers (households) to repairers and other services providers are included in the Household Consumption Expenditure figures and they were being recorded through the HBS, under the COICOP codes 06.2 (Out-patient Services), 06.3 (Hospital Services), 07.2.3 (Maintenance and repairs of personal transport equipment).
- Car registration taxes are part of the taxes on products except VAT and import duties (D.214) and they are also included in the HFCE, since they are included in the market prices reported in the HBS.

- The HBS collects and distinguishes data for both taxes and payments for the service provided by the government to households according to NA needs. Examples of payments for services provided which are included in HFCE are “Hunting, Fishing and Gun Licences”, “Issuance of Birth, Identification Document and Passport” and “Issuance of Driving Licences”. Examples of taxes not included in HFCE are “Road Transport Tax” and “Property Tax”.

The **exclusion** of the following borderline cases in HFCE is ensured as follows:

Subscriptions, contributions and dues paid by household to NPISH as well as voluntary transfers in cash or in kind by households to charities etc. are recorded through the HBS and NA section makes the necessary conceptual adjustment in order to exclude this kind of expenditure from Household Final Consumption Expenditure.

It is mentioned that a part of the expenditure on maintenance and repair of the dwellings is either considered as GFCF or IC. In the case of a rented dwelling, if the repair is not carried out by the tenant, then the services paid as well as the materials acquired for the maintenance and repair are considered as IC for the landlord and are excluded from the HFCE.

5.2.2 The borderline cases for GFCF

The **inclusion** of the following borderline cases in GFCF is ensured as follows:

- The investment in Research and Development is ensured via the R&D survey carried out by CYSTAT according to the definitions, the concepts and the methodology of the Frascati Manual.
- Following the adoption of ESA 2010, military structures and equipment are included in the GFCF and information is provided directly from the Ministry of Defence. No light weapons and armoured vehicles are used by non-military units.
- Information on the investment on mineral exploration and evaluation is obtained directly from the companies engaged in such activity.
- Data on the acquisitions less disposals of computer software and databases is obtained from the annual economic surveys. In addition, estimation is made for the own-account production of software, including a mark-up.
- Investments on entertainment, literary or artistic originals include the value of the TV productions, as obtained from the annual economic surveys, plus a mark-up. Additionally, this category includes the present value of royalties for books.

- Changes in the livestock used in production and in trees that are cultivated year after year are also included in the GFCF. Information is obtained directly from the Agricultural section of CYSTAT.
- For the case of acquisition of fixed assets by financial leasing, information is obtained from the annual economic surveys. The written instructions given to enumerators cover issues which are commonly found in economic accounts. The enumerators are trained for the specific case in examples presented during the training sessions. Issues not included in the written instructions are treated on a case by case basis.
- Terminal costs, i.e. large costs associated with the disposal of an asset are not currently relevant for Cyprus.
- The car registration tax is included in the value of the acquisition of motor vehicles and thus in the GFCF.

The **exclusion** of the following borderline cases in GFCF is ensured as follows:

- Tools that are inexpensive, such as hand tools are not included in the GFCF. A relevant footnote is included under the relevant part of the questionnaire of the annual economic surveys for Capital Investments.
- Ordinary maintenance and repairs are considered either as IC or HFCE. Only major repairs are classified under GFCF. For more information, see section 5.10.3.
- The acquisition of fixed assets to be used under an operational leasing contract is included in Intermediate Consumption as rentals, thus is excluded from GFCF.
- The annual economic surveys collect data only for acquisitions and disposal (sales) of fixed assets, hence, catastrophic losses on fixed assets are excluded.
- Machinery and equipment acquired by households for the purposes of household final consumption is excluded from GFCF because this phenomenon is not considered significant in Cyprus.

The distinction between HFCE and intermediate consumption or GFCF of unincorporated enterprises is secured by using different data sources. Specifically, data on Intermediate Consumption and GFCF of unincorporated enterprises is obtained from the annual economic surveys, whereas expenditure by Households is obtained from the HBS and extrapolated as described in the relevant section of the inventory.

5.3 Valuation

Before a statistical source can be used for valuation purposes, there is a need to check whether any conceptual adjustments are required. In the case of the annual economic surveys this task can be fulfilled with close cooperation between the structural business statistics staff and the national accountants.

Since the valuation in the HBS and the annual economic surveys conducted by CYSTAT follows the ESA2010 principle of purchaser's prices, no further adjustments are needed for this data. It should be mentioned that GFCF data is valued at purchaser prices, including installation charges and other costs of ownership transfer. The inclusion of these items in the GFCF is ensured from the instructions shown in the questionnaire of the annual economic surveys.

The valuation of acquisitions of intellectual property products is made in different ways:

- For mineral exploration, the valuation is made by 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;
- For computer software, the valuation is made by purchasers' prices when purchased on the market, and for own account software the valuation is made at its costs of production plus a mark-up for net operating surplus (except for non-market producers);
- For entertainment, literary or artistic originals there are two sub-categories of fixed assets, Production of TV programs and Literary and artistic originals. Regarding the valuation of the production of TV programs, this is made by using the sum of production costs plus a mark-up (except for non-market producers) for net operating surplus, while for literary and artistic originals the valuation is made according to a 5 year moving average.

Regarding the valuation of disposals of existing fixed assets by sale at basic prices, any costs of ownership transfer incurred are paid by the purchaser and thus are excluded from the value of disposals recorded in the annual economic surveys.

Inventories in the business accounts are valued at book values. Figures in the accounting data of inventories (finished goods, work-in-progress, raw materials and other intermediate goods, and goods for resale) at the beginning and at the end of the period are recalculated (deflated/inflated) by activity and by type of inventory to the average prices of the period. Changes in inventories are the difference between the recalculated inventory levels at the end and at the beginning of the year, after the exclusion of the respective holding gains (for more information see section 5.11).

In the external trade statistics, imports of goods are shown at c.i.f. (cost, insurance and freight) prices and exports of goods at f.o.b. (free on board). Data on imports of goods at c.i.f. prices are adjusted to f.o.b. prices using a coefficient which is equal to the weighted average of coefficients between c.i.f. and f.o.b. prices of imports, estimated separately by type of goods, kind of transport and by countries. These estimates are made by the CBC, which is responsible for the BoP statistics.

Regarding exports and imports, it is mentioned that no valuation adjustments are made due to intra group transactions within MNEs. It should be noted that no existing MNE, that is located in Cyprus, has been identified so far for transfer pricing. It is noted that, this issue is one of the main subjects which is further studied and examined within the framework of the GNI Transversal Reservation on Globalization.

For all the components of the expenditure approach the data sources are recorded on accrual basis apart data from the FIMAS which is on cash basis and the necessary accrual adjustments are made from the Government Finance Statistics (GFS) colleagues.

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

In order to ensure the transition from private and public accounting to national accounting concepts, the following items are mentioned:

- Major repairs and renovations, for more details see chapters 3.18 and 5.10,
- Valuation of inventories, for more details see chapter 5.11,
- Software and databases, for more details see chapter 5.10,
- Entertainment, literary and artistic originals, for more details see chapter 5.10,
- Research and Development, for more details see chapter 5.10,
- Insurance service charge, for more details see chapter 3.17.2,
- Allocation of FISIM, for more details see chapter 3.17.1,
- Regarding the consumption of margins on trading financial assets, it should be noted that this issue is one of the main subjects which will be studied and examined within the framework of the GNI Transversal Reservation for Margins on trading financial assets.

Concerning HBS, which is the main source for HFCE, data is collected mostly according to ESA2010 and there is no need for further adjustments. For those COICOP items that adjustments are needed or HBS should be replaced by other data source, information is provided extensively in section 5.7.

Data on exports and imports of goods and services is provided from the Balance of Payment compilers according to Balance of Payments Manual (BPM6) which is in line with ESA2010 (see sections 5.13-5.16).

A summary table with the various conceptual adjustments made to the components of the expenditure approach is provided below:

Table 5.4.1: Conceptual adjustments made on the expenditure components, 2017 (€ million)

Expenditure Component	Allocation of FISIM	Allocation of insurance	Other conceptual	Total conceptual
Total final consumption expenditure	233,3	201,3	-71,1	363,5
Household final consumption expenditure	237,8	199,7	2,1	439,6
<i>of which: Population adjustments</i>			21,3	
<i>Social Transfer in Kind</i>			-5,7	
<i>Subscriptions, contributions paid to NPISH</i>			-13,5	
NPISH final consumption expenditure	3,8	0,8	-59,5	-55,0
<i>of which: Market Output</i>			-52,1	
<i>Own-Account GFCF</i>			-13,2	
<i>Social Transfers in Kind</i>			5,7	
General government final consumption expenditure	-8,3	0,8	-13,7	-21,2
<i>of which: R&D Recognition as capital formation</i>			-54,2	
<i>R&D consumption of fixed capital</i>			40,5	
Gross capital formation	0,0	0,0	14,0	14,0
Gross fixed capital formation	0,0	0,0	0,0	0,0
Changes in inventories	0,0	0,0	14,0	14,0
<i>of which: Holding Gains</i>			14,0	
Acquisitions less disposals of valuables	0,0	0,0	0,0	0,0
Exports of goods and services	0,0	0,0	0,0	0,0
Imports of goods and services	0,0	0,0	0,0	0,0
TOTAL	233,3	201,3	-57,1	377,5

5.5 The roles of direct and indirect estimation methods and of benchmarks and extrapolations

In the vast majority of cases direct estimation methods are used for the computation of the components for the expenditure approach of GDP. Direct estimation methods are considered to be those where the required figures (Final Consumption Expenditure of General Government, Fixed Capital Formation, Exports and Imports) are recorded directly as statistical data.

Direct methods of estimation are primarily used for calculating general government expenditure and imports/exports of goods and services. The basis of information for the above expenditure categories is the GFS data and the BoP statistics, respectively. The calculation of GFCF as well as those for Changes in Inventories should be classified as a direct method (on the basis of SBS surveys).

In the case of HFCE, a rather combined approach of estimation is used since the HBS is conducted every 5 years. The latest HBS survey was carried out in 2015 and the results were incorporated during the benchmark revision of NA in September 2019. As a result, for the years between the HBS is carried out, an extrapolation method is used. For each COICOP category the best available indicators for extrapolation are used. For more information, concerning the extrapolation indices used on each COICOP category, see section 5.7.3.

It should be noted that estimates for each year are based on the final data after the balancing procedure and any administrative data, models and adjustments made for the year are excluded before the extrapolation takes place. The corresponding figures for the year after, are added accordingly.

Furthermore, indirect estimation methods are used in a limited number of cases, when no information is available from direct observation. The imputed rent value of owner-occupied dwellings is a good example in this respect (see chapter 3.5).

Table 5.5.1: The estimation methods used for the expenditure components, 2017

Component	Surveys & Censuses	Administrative Records	Combined Data	Extrapolation and Models						
				Benchmark extrapolations	Commodity Flow Model	CFC (PIM)	Dwellings - stratification method	FISIM	Insurance	Other E&M
Household final consumption expenditure		✓		✓	✓		✓			✓
NPISH final consumption expenditure	✓									
General government final consumption expenditure		✓				✓				
Gross fixed capital formation	✓	✓	✓				✓			✓
Changes in inventories	✓	✓								
Acquisitions less disposals of valuables			✓							
Exports of goods and services		✓						✓	✓	
Imports of goods and services		✓						✓	✓	

5.6 The main approaches taken with respect to exhaustiveness

The main methods used in the expenditure approach to ensure exhaustiveness origin from the production approach. A list of these main methods is the following (types of non-exhaustiveness in parenthesis):

Employment method (N5)

Illegal activities (N2)

Income in kind (N7)

Ad-hoc surveys and expert estimates (N3 & N6)

Production for own final consumption (N3 & N7)

Own-account construction (N3 & N7)

The summary table below provides an overview of the various exhaustiveness adjustments in the breakdown of expenditure components and types of non-exhaustiveness. For more information, see chapter 7.

A summary table indicating the estimation methods used for each expenditure components is provided below:

Table 5.6.1: Exhaustiveness adjustments by expenditure component, 2017 (€ million)

Expenditure component	N1	N2	N3	N4	N5	N6	N7	TOTAL
Household final consumption expenditure (HFCE)	0,0	139,1	14,9	0,0	15,3	199,0	84,9	453,3
Gross fixed capital formation (GFCF)	0,0	0,0	14,2	0,0	0,0	0,0	3,0	17,2
Import of Services	0,0	44,9	0,0	0,0	0,0	88,0	0,0	132,9
TOTAL IMPACT ON GDP	0,0	94,2	29,1	0,0	15,3	111,0	88,0	337,6

5.7 Household final consumption expenditure (HFCE)

5.7.1 Overview

Household final consumption expenditure (HFCE) is the largest component of the GDP from the expenditure side and amounts to €12.941,8 million or 63,9% of GDP in 2017. HFCE can take place either in Cyprus or abroad. The latter is regarded as imports of services and consumption expenditure in Cyprus by non-residents is regarded as Cyprus exports of services correspondingly.

The measurement of final consumption expenditure of Cyprus resident households is described as follows. For national accounting purposes, households are individuals or groups of people sharing living accommodation and, possibly, other aspects of daily life such as meals. Their consumption expenditure covers the purchase of all goods and services, including housing services, to meet their requirements for day-to-day living. It does not include the purchase of dwellings or expenditure on valuables (antiques and some jewellery), which are part of capital formation, nor does it include any expenditure on goods or services for use in a business. HFCE is recorded when obligations are incurred. For presentation purposes, HFCE is broken down according to COICOP classification. However, the underlying data series is assembled by a variety of methods and routes, depending on the data sources used.

HFCE (domestic concept) consists of all expenditure of domestic households as well as non-residents in the Economic Territory (ET) on durable, semi-durable and non-durable goods and on services. In order to convert domestic concept to national concept residents' household expenditure abroad is added and consumption expenditure of non-residents in the ET is deducted. The Balance of Payments (BoP) compiled by Central Bank of Cyprus (CBC) is the main source for both consumption expenditure by resident households in the rest of the world and consumption expenditure by non-residents in the ET. The estimates for COICOP breakdown are valued based on a special survey, carried out by CYPSTAT at the airport covering the travelers' expenditure.

Adjustment due to balancing

The Supply and Use Tables (SUT) is a primary tool for the integration, validation and verification of the production and expenditure approaches at product level. During the balancing procedure differences between supply and use are examined at product level, so that any discrepancies are eliminated. A detailed description of the SUT balancing procedure and the final adjustments performed are presented in Chapter 6.

The Table below shows the transition from the domestic concept to the national concept of the HFCE for 2017.

Table 5.7.1: Household Expenditure Aggregates (Domestic & National Concept), 2017 (€ million)

		Initial estimate	Balancing adjustment	Final estimate
Final consumption expenditure by resident households in the economic territory		11.934,4	-10,4	11.924,0
Final consumption expenditure by non-resident households in the economic territory (exports of services)	+	2.716,0	0,0	2.716,0
Household consumption expenditure (Domestic Concept)	=	14.650,4	-10,4	14.640,0
Final consumption expenditure by resident households in the rest of the world (imports of services)	+	1.017,8	0,0	1.017,8
Final consumption expenditure by non-resident households in the economic territory (exports of services)	-	2.716,0	0,0	2.716,0
Household consumption expenditure (National Concept)	=	12.952,2	-10,4	12.941,8

5.7.2 Main data sources and their conversion to national accounts results

Household Budget Survey (HBS)

The estimation procedure for Household expenditure is mainly based on the Household Budget Survey, which usually is conducted every five years. This creates the need for extrapolations for the years in between, when the HBS is not conducted. The HBS 2015 sample of 4500 households in the Government controlled area was spread evenly in 20 periods of 18 days each, over a 12-month period. The target of the survey was to collect data representing the purchasing habits of the households during a full year, taking into account seasonality for some purchases as well as the geographic location of households. Spread of fieldwork over a year would give a better average measure of events, which are subject to seasonal changes. Furthermore, the dispersion of the sample in the whole duration of 12 months fully ensured the representativeness of the sample. The results of the HBS are produced according to the COICOP classification.

The questions on the survey have different reference period (1 month, 3 months and 12 months) depending on the expenditure item reducing therefore underreporting for infrequently purchased items. In addition, the relatively high response rate (above 74,4%) together with the selection of representative sample based on 9 different strata (depending on size of the household and social status of the chief of the household) secures the reliability of the results. Regarding expenditure of children, households were also given a diary where all members of the household over 15 years of age, recorded with the help of the enumerator, all household daily expenses for 14 consecutive days.

The HBS does not cover people who live in institutions such as elderly homes, monasteries, hospitals etc. In order to include in the estimates, the consumption of the above mentioned category, the NA section makes adjustments using data from the Demographic Statistics division (number of people living in these institutions). These estimates are shown in the table at the end of this section 'Analysis Table for HFCE estimates - Domestic and National concepts, 2017'.

The COICOP values in the GNI Process Table 2017, show the final consumption expenditure by resident households in the economic territory and the value shown in the row "Transition to national concept" is the final consumption expenditure by resident households in the rest of the world.

Organizational relationships between NA and HBS staff

The close cooperation between the HBS statisticians and NA compilers ensure the high quality of HBS data by improving the relevant questionnaire as well as to cover all the necessary concepts and definitions of NA and meet the requirements of ESA 2010, as far as possible.

Retail Trade indices, administrative sources and data from the External Trade and BoP statistics are used for extrapolation purposes. Although retail trade survey data is used to interpolate between the HBS, there is a certain part of consumption, mainly services, that is not purchased from retailers. The latter is extrapolated based on other than retail trade indices such as turnover indices, employment, CPI, etc. Furthermore, for some COICOP items administrative sources are available on an annual basis. Finally, data is validated using information from JCC payments system for credit cards transactions.

Retail Trade Survey (RTS)

Retail Trade Survey is conducted on an annual basis and collects data on the structure of the trade enterprises, the commercial transactions and other financial aspects for the various kinds of activities classified under the retail trade sector. The data is produced according to NACE Rev.2 classification at a 4-digit level. For HFCE purposes, Retail Trade Turnover indicators are used for extrapolation for the years in between, when the HBS is not conducted.

Internet Purchases

In order to ensure the accuracy of the extrapolated estimates regarding internet purchases, for the years between the HBS is conducted, a leading private company which deals with the processing and settlement of cards transactions, provides to NA section the necessary data on internet purchases made by residents households for different categories of expenditure. The corresponding figures from HBS 2015 are deducted so as to avoid double counting in the relevant categories. Data on Internet Purchases are included in HFCE in the corresponding COICOP categories under "Administrative Records".

The data is treated accordingly in order to meet the proper concept of national HFCE. Purchases of residents consumed abroad and paid by credit cards are excluded from the data provided, since they are covered by the BOP statistics. Moreover, analytical data concerning private and business expenditure on internet purchases are available and the exclusion of business related expenditure is ensured.

Other Sources

For validation purposes the best alternatives sources for the following items are used (administrative sources such as Cyprus Telecommunications authority, Cyprus Electricity Authority, Central Bank of Cyprus, Insurance Companies Control Service, Survey on car prices, including new and second hand, Commodity Flow method etc.):

- i) Alcoholic beverages and Tobacco
- ii) Electricity
- iii) Purchase of vehicles
- iv) Air Transport Services
- v) Betting and Gambling Activities
- vi) Life and Non-Life Insurance
- vii) Financial Services and Stockbroker fees

Moreover, due to the conceptual differences in the data, other sources are used. Specifically, for actual/imputed rentals and FISIM, NA estimates are based on model extrapolation methods. For more details, see chapter 3.18 and chapter 3.17, respectively.

The need to adjust HBS results in order to obtain appropriate NA estimates

As a result of the population differences and the concepts (definitions) between the HBS results and the NA, the following steps are implemented in order to adjust the HBS data according to ESA 2010 concepts:

- HBS does not cover people who do not live in a household (e.g. hospitals, monasteries, prison, homes for elderly people etc.). Population statistics are used from NA in order to estimate the number of people living in collective institutes. Moreover, expert judgement is used (based on the category) in order to produce estimates for the consumption of these categories of people. For example, people who reside in elderly homes it is assumed that their consumption should be approximately equal with their pension received from the government.
- Goods or services produced by market producers and supplied to households as Social Transfers in Kind by NPISH are identified in the HBS. The value of Social Transfers in Kind is deducted from the HFCE and is included in the final consumption expenditure of NPISH.

- Subscriptions, contributions and dues paid by households to NPISH as well as voluntary transfers in cash or in kind by households to charities etc., are recorded through the HBS. The necessary conceptual adjustments are made by NA section in order to exclude this kind of expenditure from HFCE.
- Specific sources and methods are used to ensure that estimates on the illegal activities of drugs and prostitution are incorporated in the NA data. Specific adjustments were made in the corresponding COICOP items of HFCE.
- HFCE includes estimates of agricultural products produced for own final use.
- An exhaustiveness adjustment is made for insurance and financial services as a result of the employment reconciliation method. Specifically, employment reconciliation revealed that the number of insurance agents and stock brokers should be revised upwards. As a result the HFCE for these services was revised.
- Data from the annual Services Survey, concerning Betting and Gambling activities, as well as activities on the race track (Horse Race Club) are used for the exhaustiveness adjustment made for COICOP category 09.4. This adjustment refers to the COICOP item "games of chances" and is necessary because households tend to underestimate their expenditure on this item in the HBS.
- Exhaustiveness adjustment is also made in order to include the value of the fuels consumed and imputed rental of the company cars used by households for private use (Income in kind).

Regarding data from alternative sources used and adjustments made see section 5.7.3 on analytical COICOP categories.

The Household Final Consumption Expenditure by COICOP, the data sources used and the adjustments that are made are shown in the table below:

Table 5.7.2: Analysis Table for HFCE - Domestic and National concept, 2017 (€ million)

COICOP	Description	Basis for NA Figures			Adjustments							INITIAL HFCE by resident households in Economic Territory	Expenditure of Non-Resident in ET	INITIAL ESTIMATE HFCE (Domestic Concept)	Balancing adjustment (Domestic Expenditure)	FINAL ESTIMATE HFCE (Domestic Concept)
		Purchases of goods and services - HBS	Administrative Sources	Extrapolation and Models	Conceptual			Exhaustiveness adjustments								
					Population adjustments	Social Transfer in Kind & Subscriptions, contributions paid to NPISH	Allocation of insurance	Consumption of illegally produced (or imported) goods and services (N2)	Employment Reconciliation (N5)	Under-reporting (N6)	Income in Kind (N7) & own-consumption (N3 & N7)					
A	1	2	3	4	5	6	9	7	8	10=1+2+3+4+5+6+7+8+9	11	12=10+11	13	14=12+13		
01	Food and non-alcoholic beverages	0,0	0,0	1.495,6	3,4	0,0	0,0	0,0	0,0	0,0	29,5	1.528,5	186,0	1.714,5	31,8	1.746,3
01.1	Food			1.354,2	1,7						29,5	1.385,4				
01.2	Non-alcoholic beverages			141,4	1,7							143,1				
02	Alcoholic beverages and tobacco	0,0	0,0	624,3	1,4	0,0	0,0	87,5	0,0	0,0	0,0	713,3	23,6	736,9	17,3	754,2
02.1	Alcoholic beverages			236,0								236,0				
02.2	Tobacco			388,3	1,4							389,7				
02.3	Narcotics							87,5				87,5				
03	Clothing and footwear	0,0	35,0	576,4	1,4	-0,2	0,0	0,0	0,0	0,0	0,0	612,6	71,3	683,9	15,9	699,8
03.1	Clothing		27,6	465,2	0,7	-0,2						493,3				
03.2	Footwear		7,4	111,2	0,7							119,3				
04	Housing, water, electricity, gas and other fuels	0,0	286,7	1.771,7	0,0	-0,2	0,0	0,0	0,0	0,0	0,0	2.058,1	92,5	2.150,6	-18,8	2.131,8
04.1	Actual rentals for housing			225,2								225,2				
04.2	Imputed rentals for housing			1.261,7								1.261,7				
04.3	Maintenance and repair of the dwelling			38,1								38,1				
04.4	Water supply and miscellaneous dwelling services			122,0		-0,2						121,8				
04.5	Electricity, gas and other fuels		286,7	124,6								411,2				
05	Furnishings, household equipment and routine household maintenance of the house	0,0	39,8	653,3	0,0	-3,1	0,0	0,0	0,0	0,0	0,0	690,0	0,0	690,0	11,6	701,6
05.1	Furniture, furnishings, carpets and other floor coverings		11,2	123,6		-0,1						134,7				
05.2	Household textiles		0,4	28,3		-0,1						28,5				
05.3	Household appliances		6,7	67,5		-0,2						74,0				
05.4	Glassware, tableware and household utensils		5,2	39,2		-0,1						44,4				
05.5	Tools and equipment for house and garden		16,4	41,1								57,5				
05.6	Goods and services for routine household maintenance		0,0	353,5		-2,7						350,9				
06	Health	0,0	7,2	714,2	10,1	0,0	0,0	0,0	0,0	0,0	0,0	731,6	38,2	769,8	3,3	773,1
06.1	Medical products, appliances and equipment		7,2	188,9	5,1							201,2				
06.2	Out-patient services			372,1	5,1							377,2				
06.3	Hospital services			153,2								153,2				
07	Transport	0,0	79,2	1.859,3	0,0	-0,1	0,0	0,0	0,0	0,0	70,4	2.008,8	264,0	2.272,8	-45,7	2.227,1
07.1	Purchase of vehicles			545,1								545,1				
07.2	Operation of personal transport equipment		79,2	939,7							70,4	1.089,3				
07.3	Transport services			374,6		-0,1						374,5				

COICOP	Description	Basis for NA Figures			Adjustments							INITIAL HFCE by resident households in Economic Territory	Expenditure of Non-Resident in ET	INITIAL ESTIMATE HFCE (Domestic Concept)	Balancing adjustment (Domestic Expenditure)	FINAL ESTIMATE HFCE (Domestic Concept)
		Purchases of goods and services - HBS	Administrative Sources	Extrapolation and Models	Conceptual			Exhaustiveness adjustments								
					Population adjustments	Social Transfer in Kind & Subscriptions, contributions paid to NPISH	Allocation of insurance	Consumption of illegally produced (or imported) goods and services (N2)	Employment Reconciliation (N5)	Under-reporting (N6)	Income in Kind (N7) & own-consumption (N3 & N7)					
A	1	2	3	4	5	6	9	7		8	10=1+2+3+4+5+6+7+8+9	11	12=10+11	13	14=12+13	
08	Communications	0,0	0,0	362,8	0,0	-0,1	0,0	0,0	0,0	0,0	0,0	362,7	27,1	389,8	-2,9	387,0
08.1	Postal Services			10,8								10,8				
08.2	Telephone and telefax equipment			33,8								33,8				
08.3	Telephone and telefax services			318,1		-0,1						318,1				
09	Recreation and culture	0,0	59,0	616,1	2,1	-1,2	0,0	0,0	0,0	199,0	0,0	875,0	106,3	981,3	-16,5	964,9
09.1	Audio-visual, photographic and information processing equipment		49,2	88,7								137,9				
09.2	Other major durables for recreation and culture			4,7								4,7				
09.3	Other recreational items and equipment, flowers, gardens and pets		5,1	155,6								160,7				
09.4	Recreational and culture services ³			303,7						199,0		502,7				
09.5	Newspapers, books and stationery		4,7	60,1	2,1							66,9				
09.6	Package holidays			3,3		-1,2						2,1				
10	Educational services	0,0	0,0	342,4	0,0	0,0	0,0	0,0	0,0	0,0	0,0	342,427	79,0	421,4	-4,5	416,9
10.1	Primary Education			85,7								85,7				
10.2	Secondary Education			153,0								153,0				
10.3	Post Secondary Education			2,6								2,6				
10.4	Tertiary Education			90,8								90,8				
10.5	Education not definable by level			10,2								10,2				
11	Restaurants and hotels	0,0	0,0	786,3	0,0	-0,9	0,0	0,0	0,0	0,0	0,0	785,5	1.713,8	2.499,2	7,5	2.506,8
11.1	Catering services			725,9		-0,1						725,8				
11.2	Accommodation services			60,4		-0,8						59,7				
12	Miscellaneous goods and services	0,0	167,0	803,0	2,8	-13,5	199,7	51,6	15,3	0,0	0,0	1.225,9	114,2	1.340,1	-9,5	1.330,6
12.1	Personal care		1,7	365,6	1,4							368,7				
12.2	Prostitution							51,6				51,6				
12.3	Personal effects		23,5	80,7	1,4							105,5				
12.4	Social protection			22,2								22,2				
12.5	Insurance		8,4				199,7		10,7			218,9				
12.6	Financial services		133,4	238,1					4,6			376,1				
12.7	Other services			96,4		-13,5						82,9				
	Total	0,0	674,0	10.605,4	21,3	-19,2	199,7	139,1	15,3	199,0	99,8	11.934,4	2.716,0	14.650,4	-10,4	14.640,0
	<i>minus expenditure of non-residents in ET</i>															-2.716,0
	<i>plus expenditure of residents abroad</i>															1.017,8
	Total PHC in National Concept															12.941,8

Notes:

1. Adjustments were made for non-response differential in HBS 2015 data, so extrapolated data for 2017 implicitly include these extrapolation estimates.

2. Population adjustments are made for those people living in institutes, monasteries, elderly homes, prison etc.

3. COICOP category 09.4 includes the value of 114,3 € million from the Services Survey data, concerning Betting and Gambling activities, as well as activities on the race track (Horse Race Club). Adjustment on this category refers to the item "games of chances" because the households tend to underestimate their expenditure on this item.

4. Goods or services produced by market producers and supplied to households as Social Transfers in Kind by NPISH are identified in the Household Budget Survey. The value of Social Transfers in Kind is deducted from the Private Final Consumption and is included in the final consumption expenditure of NPISH.

5. The amount of 238,1 million, presented under the column 'Extrapolation and Models', includes FISIM allocated to households as consumers amounted to 237,8 million.

5.7.3 Sources and Methodology

The Classification of Individual Consumption by Purpose (COICOP) is used to record the household final consumption expenditure by purpose. The analysis of the main sources for each COICOP category is presented below together with the relevant extrapolation indices that are used at 3-digit level. The relevant tables for each category show the extrapolated estimates for 2017, which coincide with the column “Benchmark extrapolations” of the GNI Process Table 2017.

It should be noted that HFCE 2016 extrapolated estimates are produced after the balancing procedure for 2016 is completed. However, any administrative data, models and adjustments that were made are excluded before the extrapolation process of 2017 took place. The corresponding figures for the year after, are added accordingly.

01 Food and non-alcoholic beverages

The main data source for this category is the HBS diary for the household’s daily expenses. Households within the sample of the HBS keep daily records for the daily expenses for a period of 14 consecutive days. In order to produce extrapolated figures, data from retail trade statistics and the Consumer Price Index (CPI) with the growth rate on average number of households are used. Data obtained from the “JCC payment system” transactions (Card-processing business data), is used for validation.

It should be noted that agricultural products produced for own final use are included in the final estimate. This value is estimated at €29,5 million for 2017. For more details, see Chapter 7.

€ million

	HFCE extrapolated estimates 2016	Extapolation Index used	Extrapolated estimates 2017
01 - Food and non-alcoholic beverages	1.473,2		1.495,6
01.1 Food	1.332,7	101,6	1.354,2
01.2 Non-alcoholic beverages	140,5	100,6	141,4

02 Alcoholic beverages, tobacco and narcotics

Alcoholic beverages and tobacco

Alcoholic beverages and tobacco are significantly underestimated categories in the HBS since people do not feel comfortable to admit the exact amount of their expenditure on these products. Estimates on the consumption of tobacco are based on Cyprus and European Statistics regarding the numbers of smokers, the price and the average consumption on different categories of cigarettes.

Estimates on the consumption of alcoholic beverages are based on information related to the value of imports minus exports, local production, excise duties and trade margins of these products. The values of intermediate consumption (sourced by Hotels and Restaurants Survey) and tourist expenditure on alcoholic beverages are excluded from the calculation of these estimates (Commodity flow method).

02.3 Narcotics

Specific sources and methods are used in order to ensure that estimates on narcotics are included in the HFCE. This value is estimated at €87,5 million for 2017. Detailed methodological information regarding Illegal Activities is presented in Chapter 7.

03 Clothing and footwear

This category covers purchases of clothing and footwear as well as rental, repair and cleaning of clothing articles and footwear. Estimates are based on the HBS data. The CPI and the growth rate of average number of households are used in order to produce extrapolated figures. Data from retail trade statistics and data from “JCC payment system” transactions are used for validation. Clothing for personal use provided by employers as “income in kind” is included in this category, as the “way of acquisition” is stated for all items in the HBS. Expenditure on hire, repair and cleaning of clothing articles (dry cleaning and laundry) and footwear is derived also from the HBS.

€ million

	HFCE extrapolated estimates 2016	Extapolation Index used	Extrapolated estimates 2017
03 - Clothing and footwear	569,4		576,4
03.1 Clothing	460,4	101,0	465,2
03.2 Footwear	109,0	102,0	111,2

04 Housing, water, electricity, gas and other fuels

04.1 – 04.2 Actual and Imputed rentals for housing

Rental for dwelling services is estimated on the basis of actual rentals of rented dwellings (04.1) and on the imputed rentals of owner occupied dwellings (04.2). ESA 2010 states that the service produced by owner-occupied dwelling must be measured by the value of rentals of similar rented dwelling. CYSTAT applies the stratification method which has the basic principle that the housing stock is divided into a number of strata and an inference is made about the imputed rentals of owner-occupied dwelling from the actual rentals obtained by the survey of rented dwellings in the same stratum. In principle, Cyprus adopted the direct quantity-price estimation variant, by

incorporating elements of the regression analysis method within the general context of the stratification method, since the rented dwellings represent a comparatively small proportion of dwellings units to total stock. For more details, see chapter 3.

04.3 Maintenance and repair of the dwelling

For consistency with the treatment of housing rental, this heading is intended to cover only the type of maintenance and repair expenditure that would be incurred by a tenant, not a landlord. Any expenditure incurred by a landlord, including such activity by owner-occupiers, would be intermediate consumption of a producer for housing services rather than final consumption expenditure by a household. For more details, see chapter 3.

04.4 Water supply and miscellaneous services related to the dwelling

Estimates of household payments for water and sewerage charges are based on the HBS. The CPI and the growth rate of average number of households as well as data from retail trade statistics are used in order to produce extrapolated figures.

04.5 Electricity, gas and other fuels

The main data source regarding household expenditure on electricity is Cyprus Electricity Authority. The data is separately presented and is clearly recorded as domestic household's expenditure on electricity. Therefore, the exclusion of electricity consumption by enterprises is ensured.

However, the data source for estimating expenditure on gas and other fuels is the HBS. The CPI and the growth rate of average number of households as well as data from retail trade statistics are used in order to produce extrapolated figures.

€ million

	HFCE extrapolated estimates 2016	Extapolation Index used	Extrapolated estimates 2017
04 - Housing maintenance, water, electricity, gas and other fuels	275,7		284,7
04.3 - Maintenance and repair of the dwelling	37,8	100,7	38,1
04.4 - Water	121,4	100,5	122,0
04.5 - Gas and other fuels	116,5	107,0	124,6

05 Furnishings, household equipment and maintenance of the house

05.1 Furniture and furnishings, carpets and other floor coverings

This category covers all household expenditure on new or used furniture and floor coverings except office and furniture used for professional purposes. It includes picture frames, antiques and works of art, but excludes any antiques etc. purchased for investment (which are treated as capital formation). The main data source for the benchmark year is the HBS. In order to produce extrapolated figures data from retail trade statistics and from the “JCC payment system” transactions are used.

05.2 Household textiles

This category includes furnishing fabrics, curtains, cushions, bedding, bed and table linen and their repair. The main data source for the benchmark year is the HBS. In order to produce extrapolated figures data from retail trade statistics and data from the “JCC payment system” transactions are used.

05.3 Household appliances

This category covers all retail sales and repairs of domestic appliances. It includes electrical and non-electrical appliances (i.e. cookers, washing machines, refrigerators, heaters, dishwashers, vacuum cleaners, sewing machines etc.), but excludes central heating which is regarded as capital expenditure. Audio-visual appliances (televisions etc.) and small electrical appliances for personal use (i.e. shavers, hairdryers) are excluded; they are covered in categories *09.1* and *12.1* below, respectively. The main data source for the benchmark year is the HBS. In order to produce extrapolated figures, the retail trade statistics and data from the “JCC payment system” transactions are used.

05.4 Glassware, tableware and household utensils

Data is obtained from the HBS and in order to produce extrapolated figures data from “JCC payment system” transactions are used.

05.5 Tools and equipment for house and garden

This includes items such as motorised tools, ladders, lawnmowers and small electrical accessories (sockets, wiring, torches, batteries etc.). Data is obtained from the HBS and in order to produce extrapolated figures data from the “JCC payment system” transactions are used.

05.6 Goods and services for routine household maintenance

The main data source for this category is the HBS, which provides information on household expenditure on soap, detergents and other cleaning materials and also on domestic services such as

cleaning of the house, window cleaning, dry cleaning and laundering of household textiles and hire of furniture and household equipment. The CPI and the growth rate of average number of households and data from retail trade statistics are used in order to produce extrapolated figures.

€ million

	HFCE extrapolated estimates 2016	Extapolation Index used	Extrapolated estimates 2017
05 - Furnishings, household equipment and routine household maintenance of the house	625,7		653,3
05.1 - Furniture, furnishings, carpets and other floor coverings	114,9	107,6	123,6
05.2 - Household textiles	26,3	107,6	28,3
05.3 - Household appliances	62,7	107,7	67,5
05.4 - Glassware, tableware and household utensils	34,2	114,7	39,2
05.5 - Tools and equipment for house and garden	38,2	107,5	41,1
05.6 - Goods and services for routine household maintenance	349,4	101,2	353,5

06 Health

06.1 Medical products, appliances and equipment

Data is obtained from the HBS and for the years after relevant retail trade indicators and data from the “JCC payment system” transactions are used in order to produce extrapolated figures.

06.2 Out-patient services

Data for the specific category is obtained from the HBS. Actual hours worked and total number of employees from NA employment figures together with the CPI are used for extrapolation.

06.3 Hospital services

Data for the specific category is obtained from the HBS. Actual hours worked and total number of employees from NA employment figures together with the CPI are used for extrapolation.

€ million

	HFCE extrapolated estimates 2016	Extapolation Index used	Extrapolated estimates 2017
06 - Health	673,3		714,2
06.1 - Medical products, appliances and equipment	185,4	101,9	188,9
06.2 - Out-patient services	346,4	107,4	372,1
06.3 - Hospital services	141,5	108,3	153,2

07 Transport

07.1 Purchase of vehicles

Estimates of household spending on vehicles (both new and second hand) are based on information about vehicle prices from the majority of the car dealers in Cyprus and vehicles registrations. The methodology for the compilation of household spending on vehicles is based on a quantity*price approach. Vehicles registrations are available from administrative source (Road Transport Department) which provides detailed data for all motor vehicle registration categories, private saloon cars and light goods vehicles by engine cubic capacity and label. A report concerning the above mentioned registrations is prepared by CYSTAT from which the quantity element of the above equation is derived.

In order to align with the accrual concept, the data used by the NA are provided by the vehicle prices survey, which is conducted by CYSTAT. For the needs of this survey, CYSTAT uses the analytical data (by brand name and cubic capacity) of car registrations for the reference period and obtains the corresponding price information from the importing companies. Thus, the selling prices for each specific brand and cubic capacity are recorded and utilized for the car registrations. In this way the accrual basis on purchase of new cars is secured. Estimates of the HFCE on vehicles are based on the actual transaction prices. These are the catalogue list prices minus the discount made to the customer. Prices of the registered cars sold are collected either from official importing companies (for the sales of new cars) or from car dealers enterprises (for the sales of used cars).

Expenditure on used vehicles has two different components, depending on the type of previous owners. For vehicles previously owned by households for private use, only the dealers' margins on the vehicles are recorded in HFCE. For vehicles previously owned by businesses or for business purposes, the full values of the vehicles as well as any dealers' margins are included in household expenditure.

NA estimates on second-hand cars are based on car registrations (new or second-hand) which are obtained from imports. These estimates do not include transactions between households, since no new registrations are made. Regarding transactions between households via a car dealer, an adjustment is made based on information from the HBS (purchase from car dealers), on which a margin rate (5%) is applied.

The main data source related to expenses made by households for the purchase of motorcycles and bicycles is the HBS.

07.2 Operation of personal transport equipment

The main source of information for spare parts and accessories (COICOP 07.2.1) is the HBS. The CPI with the growth rate on average number of households are used for extrapolation.

Estimates of household expenditure on petrol, diesel and lubricants (COICOP 07.2.2) are based on information provided by the HBS and indices on short term statistics regarding price indices on Retail trade on automotive fuel are used for extrapolation. In addition, an exhaustiveness adjustment is made in order to include the value of fuels consumed for the private use of company cars. This value is estimated at €36,8 million for 2017. For more details, see chapter 7.

Concerning estimates on maintenance and repairs (07.2.3), these are made up of two components: repairs financed directly by households and financed directly by insurance claims. Repairs financed directly by household are based on the HBS. The CPI with the growth rate on average number of households and data from retail trade statistics are used for extrapolation.

In the case of repairs financed by insurance claims, payments are almost invariably made by insurance companies direct to garages; such payments are not recorded in the HBS. For these repairs, estimates are based on payments information from the insurance companies. In the process table these payments are shown under administrative sources and amounted to €79,2 million.

The main source of information on other services in respect of personal transport equipment (COICOP 07.2.4) is the HBS. CPI with the growth rate on average number of households and data from retail trade statistics are used for extrapolation. Estimates of the value of the use of company cars for private purposes should also be part of this component of HFCE. As mentioned above, an exhaustiveness adjustment is made in order to include the value of the imputed rental of the company cars used by the household for private use. This value is estimated at €33,6 million for 2017. For more details, see chapter 7.

07.3 Transport Services

The main source of information for expenditure on passenger transport by road, i.e. buses, taxis and passenger transport by sea (COICOP 07.3.2 and 07.3.4) is the HBS. Data obtained from short term statistics for the turnover of the Land and Sea Transport Sectors (nominal index and percentage change) are used for extrapolation.

Concerning estimates on passenger transport by air (COICOP category 07.3.3), it was revealed during validation checks that data from the HBS is underestimated. Hence, an extrapolation model is used

for the calculation on this COICOP expenditure. Specifically, the number of trips of residents abroad together with an average ticket price assumed were used for this estimate.

€ million

	HFCE extrapolated estimates 2016	Extapolation Index used	Extrapolated estimates 2017
07 - Transport	889,3		959,1
07.1 - Purchase of vehicles	9,7	125,0	12,2
07.2 - Operation of personal transport equipment	872,9	107,7	939,7
07.3 - Transport services	6,7	108,6	7,2

08 Communications

08.1 Postal services

The HBS is the main data source for Postal Services estimates for the benchmark year. The turnover value index on the Post and Courier activities Sector is used for extrapolation.

08.2 Telephone and telefax equipment

The HBS is the main data source for the benchmark year. In order to produce extrapolated figures, data from the turnover value index on Telecommunication Sector is used.

08.3 Telephone and telefax services

Cyprus Telecommunication Authority (CYTA) is the major service provider of telephone and telefax services. Data is based on information from the HBS for the benchmark year and for extrapolated figures the Turnover Value Index on Telecommunication Sector is used. No information provided under the Mini One-Stop-Shop (MOSS) Scheme is used.

€ million

	HFCE extrapolated estimates 2016	Extapolation Index used	Extrapolated estimates 2017
08 - Communications	357,5		362,8
08.1 - Postal Services	9,8	109,7	10,8
08.2 - Telephone and telefax equipment	33,0	102,6	33,8
08.3 - Telephone and telefax services	314,7	101,1	318,1

09 Recreation and culture

09.1 Audio-visual, photographic and information processing equipment

This category covers all audio-visual goods (i.e. radios, TVs, video recorders, CD players), personal camcorders, computers, calculators, photographic equipment and film (but not processing), other audio-visual goods, computer software and repair of the above equipment. Estimates of HFCE on audio-visual equipment are derived from the HBS and for extrapolation the turnover in retail trade statistics (short term indicator) and the CPI with the growth rate on average number of households are used.

09.2 Other major durables for recreation and culture

This covers a wide variety of items. It includes major durables for outdoor recreation such as boats, bicycles and caravans, ranging from aircraft, boats, bicycles and caravans, for recreational purposes (rather than business transport), musical instruments and major durables for indoor recreation. The HBS is the main source of information. Retail trade indices and the CPI with the growth rate on average number of households are used for extrapolation.

09.3 Other recreational items and equipment, gardens and pets

Expenditure on games, including video games, toys and hobbies, sports equipment, novelties and souvenirs is obtained from the HBS. Expenditure on flowers, plants and gardening supplies, pets and veterinary services is obtained from the HBS. Retail trade indices and the CPI with the growth rate on average number of households are used for extrapolation.

09.4 Recreational and cultural services

This category covers respectively admissions charges and fees paid to cinema, theatres, dances, participant and spectator sports events, theme parks, zoos and museums, cable and satellite television subscriptions and other relevant services. Estimates of household consumption on these categories are based on information from the HBS. CPI with the growth rate on average number of households are used for extrapolation.

Games of chance

HFCE on betting and gaming, including the national lottery, is defined as the amount staked less than the amount returned in winnings, representing, essentially, the cost of the service, that is, the net loss incurred by households. This net loss is equivalent to the net takings of persons engaged in the industry plus the amount taken by the government in the form of betting duties. For the various

forms of betting such as football betting, horse races betting etc. estimates from the HBS are undervalued so several adjustments are made. The main source for this kind of expenditure is the Services Survey concerning Betting and Gambling activities, as well as activities on the race track (Horse Race Club). Adjustments of €199,0 million are made to the HFCE regarding e-gambling (€88,0 million) and horse-racing betting (€111,0 million). These adjustments are based on expert's estimates, ad-hoc surveys and information from newspapers and articles from different media communications. Data regarding the transactions on betting through the "JCC payment system" is also used. See Chapter 7 for details.

9.5 Newspapers, books and stationery

Data from the HBS is used for expenditure on newspapers and books since this source is considered to provide better coverage of this type of expenditure by households. Newspapers, magazines and books are bought from a wider range of outlets than retailers; they range from publishers to street traders and also include sources outside Cyprus. CPI with the growth rate on average number of households are used for extrapolation.

€ million

	HFCE extrapolated estimates 2016	Extrapolation Index used	Extrapolated estimates 2017
09 - Recreation and culture	602,8		616,1
09.1 - Audio-visual, photographic and information processing equipment	91,5	96,9	88,7
09.2 - Other major durables for recreation and culture	4,6	102,1	4,7
09.3 - Other recreational items and equipment, flowers, gardens and pets	155,0	100,4	155,6
09.4 - Recreational and culture services	287,5	105,6	303,7
09.5 - Newspapers, books and stationery	60,9	98,7	60,1
09.6 - Package holidays	3,3	100,1	3,3

10 Education

10.1 Pre-primary and primary education

Expenditure under this heading relates to tuition fees paid to private junior and preparatory schools and other educational establishments for children in this age group. Data is obtained from the HBS and the CPI with actual hours worked from NA employment figures are used for extrapolation.

10.2 Secondary education

Expenditure under this heading relates to tuition fees paid to schools and other educational establishments. Estimates are compiled from information provided by households from the HBS. The CPI with actual hours worked from NA employment figures are used for extrapolation.

10.3 Post-Secondary non-tertiary education

This category includes any expenditure paid for out-of-school post-secondary non-tertiary education for adults and young people.

10.4 Tertiary education

Expenditure under this category relates to tuition fees paid to universities and other educational establishments. Expenditure on food is included under catering (11.1) and expenditure on accommodation is included under housing (04.1). The CPI with actual hours worked from NA employment figures are used for extrapolation.

10.5 Education not definable by level

This category covers expenditure such as evening classes, similar courses provided for general education and training rather than necessarily with a view to obtain educational qualifications. Data is obtained from the HBS and the CPI with actual hours worked from NA employment figures are used for extrapolation.

€ million

	HFCE extrapolated estimates 2016	Extapolation Index used	Extrapolated estimates 2017
10 - Educational services	327,7		342,4
10.1 - Primary Education	82,0	104,5	85,7
10.2 - Secondary Education	146,5	104,5	153,0
10.3 - Post Seconadry Education	2,5	104,5	2,6
10.4 - Tertiary Education	86,9	104,5	90,8
10.5 - Education not definable by level	9,8	104,5	10,2

11 Hotels, Cafes and Restaurants

Estimates under this category cover various categories of spending on accommodation and catering services. Spending on meals and accommodation in hotels, restaurants, clubs and canteens are included under this category. Estimates are based on information obtained from the HBS. Data

obtained from “JCC payment system” transactions and the Turnover index on accommodation and food service activities are used for extrapolation.

11.1 Catering services

Data on household spending on meals outside the home and other catering services, is obtained from the HBS. Food in kind (canteens) is included under this heading and represents the value of subsidised food provided to employees, residents of residential and nursing homes, hostels and other communal establishments.

Expenditure on alcohol consumed on licensed premises (restaurants, cafés, hotels etc.) is included in catering services. Drinks are valued at the prices paid by consumers including any charge for serving them.

11.2 Accommodation services

The estimates for the specific category are based on the HBS. Extrapolations are based on data from the “JCC payment system” transactions.

€ million

	HFCE extrapolated estimates 2016	Extrapolation Index used	Extrapolated estimates 2017
11 - Restaurants and hotels	719,6		786,3
11.1 - Catering services	665,3	109,1	725,9
11.2 - Accommodation services	54,3	111,2	60,4

12 Miscellaneous goods and services

12.1 Personal care

This category covers expenditure on hairdressing, beauty care and personal hygiene including both goods (e.g. hairdryers, toothbrushes, shavers, toilet paper and soap) and services purchased by households. Data on hairdressing, beauty care and similar services is obtained from the HBS. The CPI with actual hours worked from NA employment figures as well as data from the “JCC payment system” transactions are used for extrapolation.

12.2 Prostitution

Specific sources and methods are used to ensure that estimates on prostitution expenditure are included in the HFCE. This value is estimated at €51,6 million for 2017. Detailed methodological information regarding Illegal Activities is presented in Chapter 7.

12.3 Personal effects n.e.c.

Expenditure on jewellery, clocks and watches and related repair services provided through retailers are derived from the HBS. Most jewellery purchases are regarded as being part of household consumption. Data concerning short term statistics for the turnover in retail trade statistics are used for extrapolation.

12.4 Social protection

This category covers household payments for such services as play schools and child minders outside the child's own home (i.e. other than baby-sitting etc. which is classified under Domestic and household services). Moreover, this category covers residential homes for the elderly and carers for individuals in their own homes. It also includes the expenditure of those living in private residential and nursing homes. Data is obtained from the HBS and the CPI with the growth rate on average number of households are used for extrapolation.

The figures do not include direct expenditure on meals and accommodation from the public sector (e.g. hospitals, prisons, homes for the elderly) or on school meals, since they are classified under the general government final consumption.

12.5 Insurance

The output value for insurance services is estimated using analytical Structural Business Statistics data obtained from the Insurance Companies Control Service. The value of output is allocated to policyholders (use side) in proportion to their actual premiums paid. For more details on how is allocated to HFCE please see chapter 3.17.

Additionally, an exhaustiveness adjustment of €10,7 million for 2017 is made as a result of the employment reconciliation framework concerning activities of insurance agents (NACE 66.2). For details see chapter 7.1.3.

12.6 Financial services n.e.c.

Monetary services n.e.c.

This category includes a variety of charges for financial services, such as bank charges, fees, commissions paid to banks by the households sector. Estimates are based on data derived from the Central Bank of Cyprus. This COICOP category also includes FISIM allocated to households as consumers. This value is estimated at €237,8 million for 2017. For details see Chapter 3.17.1.

Stockbrokers' charges

The estimates for the specific category are based on the HBS. In addition, an exhaustiveness adjustment of €4,6 million for 2017 is made, as a result of the employment reconciliation framework concerning activities of stock brokers (NACE 66.2). For details see Chapter 7.1.3.

12.7 Other services n.e.c.

This item includes a range of services not covered elsewhere, including legal fees (other than these for the transfer of ownership of land and buildings, which are treated as part of fixed capital formation), advertising and pawnbrokers' charges, services of photographers, auctioneers, etc., cloakroom fees, etc. Data is obtained from the HBS. The CPI and the actual hours worked from NA employment figures are used for extrapolation. As previously mentioned, subscriptions, contributions and dues paid by households to NPISH, as well as voluntary transfers in cash or in kind by households to charities etc. are recorded through the HBS (€13,5 million). Thus, NA section makes the necessary conceptual adjustment in order to exclude this kind of expenditure from HFCE.

	HFCE extrapolated estimates 2016	Extrapolation Index used	Extrapolated estimates 2017
12 - Miscellaneous goods and services	530,2		565,2
12.1 - Personal care	337,3	108,4	365,6
12.3 - Personal effects	78,9	102,3	80,7
12.4 - Social protection	22,1	100,2	22,2
12.6 - Financial services	0,29	103,0	0,30
12.7 - Other services	91,5	105,3	96,4

€ million

5.8 NPISH final consumption expenditure

The Non-Profit Institutions Serving Households (NPISH) sector in Cyprus is partly comprised of education such as Communal Kindergartens (NACE 85.10.3), health activities such as Medical Laboratories (NACE 86.90.1), activities of membership organizations, political parties, labour and professional organizations (NACE 94) and recreational cultural and sporting activities such as museums, libraries and sport clubs (NACE 91.01.3, 91.01.9, 91.02, 93.12.1, 93.19.1).

The estimates for the total output of NPISH is calculated as the sum of production costs (see Chapter 3). The total output is divided by purpose into own-account fixed capital formation and sales to other institutional sectors. This allows for the exclusion of the items “receipts from sales of products” and “own account capital formation” from the final consumption expenditure estimates.

Therefore, although they are included in the estimates for total output, they are excluded from the final consumption expenditure calculations.

On a similar pattern a provision is made for the inclusion in the final consumption expenditure of the NPISH of the goods or services produced by market producers and supplied to households as social transfers in kind.

The final consumption expenditure by different types of NPISH is presented in the table below using COPNI classification.

COPNI CLASSIFICATION	NPISH OUTPUT (1)	MARKET OUTPUT (2)	Own-account GFCF (3)	S.T.K (4)	NPISH FINAL CONSUMPTION (5) = (1-2-3+4)
01 - HOUSING	6,6	0,0	0,0	0,0	6,6
02 - HEALTH	32,8	0,0	5,1	1,0	28,7
03 - RECREATION AND CULTURE	54,7	19,7	0,0	0,0	35,0
04 - EDUCATION	6,0	0,0	0,0	0,0	6,0
05 - SOCIAL PROTECTION	20,4	8,9	0,0	0,9	12,5
06 - RELIGION	53,8	13,4	0,0	0,0	40,4
07 - POLITICAL PARTIES, LABOUR AND PROFESSIONAL	36,3	10,0	0,0	0,0	26,3
08 - ENVIRONMENTAL	0,0	0,0	0,0	0,0	0,0
09 - SERVICES	56,2	0,0	8,1	3,7	51,9
TOTAL	266,9	52,1	13,2	5,7	207,4

The reference framework for the NPISH sector is defined by the Business Register which covers all the NPISH units. The sample of the annual economic surveys is designed according to the economic activity (NACEs). The main sources for the NPISH output are the annual economic surveys of 2017. In the case of Research and Development (NACE 72) a different survey is conducted. Once the output from the annual economic surveys is obtained, the FISIM allocation is applied. For NPISH, the only adjustment for 2017 was the FISIM allocation (see excerpt from the process table below). The classification of NPISH output into COPNI codes was extracted by the description of NACEs.

NACE	SURVEY	FISIM ALLOCATION	INSURANCE ALLOCATION	NPISH OUTPUT
72	12,4	0,0	0,0	12,4
85	2,1	0,0	0,0	2,2
86	20,8	0,3	0,0	21,1
87	24,4	0,4	0,1	24,8
88	39,1	0,6	0,0	39,8
91	7,8	0,1	0,1	8,0
93	46,0	0,7	0,1	46,8
94	109,6	1,7	0,5	111,8
TOTAL	262,4	3,8	0,8	266,9

An institutional unit is classified as NPISH if it is a non-market producer. The distinction between market and other non-market producers is made using the 50% criterion: If less than 50% of the production costs are covered by the sales, the institutional unit is an “other non-market producer” and classified to the sector NPISH. Sales and production costs are defined as follows:

- (a) Sales cover the sales excluding taxes on products and granted to any kind of producer in this type of activity, i.e. all payments linked to the volume or value of output are included, but payments to cover an overall deficit are excluded
- (b) Production costs are the sum of intermediate consumption, compensation of employees, consumption of fixed capital and other taxes on production. For this criterion other subsidies on production are not deducted. To ensure consistency of the concepts sales and production costs when applying the 50% criterion, the production costs should exclude all costs made for own-account capital formation.

However, some NPISH institutions have resources that derive from occasional sales of specific products. These sales are considered to be Market Output and can be found through the SUT process.

NPISH units are distinguished from Households sector as the latter can be market producer (unincorporated enterprise) or producer for own final use (owner-occupied dwellings and the own account production of goods).

When the NPISH unit is a non-market producer and is under the control of government, then is classified in the general government sector. In the case of NPI serving business, when their total contributions or subscriptions (of the group of business concerned) don't exceed 50% of their productions cost are classified to the NPISH.

As previously mentioned, the normal practice for calculating Output of a non-market producer is the sum of production costs. The components of output are as follows:

- **Intermediate Consumption:** Is the sum of direct expenses, administrative expenses and Rentals
- **Compensation of employees:** This figure derives from the economic surveys and includes:
 - Gross Wages and Salaries: are normal wages and salaries, 13th and 14th salaries, overtime earnings, bonuses, value of payments in kind, cost of living allowances etc. The payments are given gross i.e. before any deductions for income tax, social insurance and other contributions to other funds.
 - Employers' contribution to various funds includes social insurance, provident funds, medical and other funds.
- **Capital Consumption:** The way in which capital consumption is distributed among the NPISH economic activities is determined with a ratio of output of NPISH/ output of total NACE Divisions that NPISH belong. For the complete coverage of Consumption of Fixed Capital see detailed description in section 4.12.
- **Productions taxes:** are available from the annual economic survey results.

Regarding the items that are excluded from the output:

- "Receipts from sales of products" to other institutional sectors are identified through the SUT process, as is the Market Output of NPISH and is divided to certain products (CPAs). When subtracting the market output figures from the total output of the NPISH sector one can derive the non-market output of NPISH.
- Own account Capital Formation for NPISH exist only in Scientific and Research Development (NACE 72) and is identified from the Research and Development survey.

Social Transfers in Kind that are supplied to households by NPISH are identified in the HBS, which provides information according to the way of acquisition. The value of Social Transfers in Kind (S.T.K.) is deducted from the Private Final Consumption and is included in the final consumption expenditure of NPISH.

5.9 Government final consumption expenditure

The final consumption expenditure of the public sector is calculated by means of the following formula:

Table 5.9.1: Final consumption expenditure, 2017 (€ million)

ESA2010		S13	S1311	S1313	S1314
P.1	Output	+ 3.635,2	3.356,8	265,9	12,5
P.11+P.12	Market output and output for own final use	- 228,6	175,9	52,7	0,0
P.13	Other non-market output	= 3.406,6	3.180,9	213,2	12,5
P.131	Payments for other non-market output	- 411,6	360,9	50,7	0,0
D.632	Social transfers in kind - market production purchased by General Government and NPISHs	+ 5,9	5,9	0,0	0,0
P.3	Final consumption expenditure	= 3.000,9	2.825,9	162,5	12,5
P.31	Individual consumption	1.546,5	1.511,1	27,6	7,8
P.32	Collective consumption	1.454,4	1.314,8	134,9	4,7

The delimitation of the General Government sector is in line with ESA 2010 concepts and it is performed by the GFS section. A review of the General Government sector is carried out on an annual basis and the procedure, along with the list of units allocated to each sector, is listed in the *“Inventory of the methods, procedures and sources used for the compilation of deficit and debt data and the underlying government sector accounts”* that is published on the Eurostat and the CYPSTAT websites.

The following table presents the values for General government final consumption expenditure derived from individual categories of sources and the values for conceptual adjustments.

Table 5.9.2: Government Final Consumption Expenditure - Sources and adjustments, 2017

Government Final Consumption Expenditure from Administrative Records	2.573,7
<i>plus</i> adjustment to consumption of fixed capital due to PIM	448,4
Basis for NA Figures	3.022,1
<i>plus</i> FISIM consumption	-8,3
<i>plus</i> Insurance allocation	0,8
<i>minus</i> R&D recognition as capital formation	54,2
<i>plus</i> R&D consumption of fixed capital	40,5
Conceptual adjustments	-21,2
Exhaustiveness adjustments	0,0
Balancing	0,0
Government Final Consumption Expenditure	3.000,9

The data sources for each General Government sub-sector are laid out below:

Central Government

The Central Government in Cyprus consists of budgetary units, extra-budgetary funds, semi-government organisations as laid out in Chapter 3.1 under the heading **General Government (S13)**.

All data concerning the budgetary transactions are received from the (FIMAS) National Treasury's online accounting database system. FIMAS provides detailed information (about 20,000 budget expenditure codes and 1,000 budget revenue codes) for budget activities (State budget) but also revenue and expenditure details for the extra-budgetary funds and the Social Security funds. FIMAS is accessed by the GFS section every month to obtain all the budget transactions in order to compile monthly accounts for the General Government. Each code has a unique identification serial number and description. The level of detail is very high and provides all the necessary information concerning the flows between various bodies of the same sub-sector and other sectors of General Government.

Having this kind of analysis available, the GFS section monitors all budget codes on a monthly, quarterly, as well as on an annual basis. All budget codes have been classified according to ESA2010 as well as by NACE categories and by function (COFOG).

Any new budget codes are investigated and coded as soon as they appear in the FIMAS. Access to the FIMAS concerning the transactions of the reference month is made available twenty days after the end of each month.

Data on semi-government organisations are received via the National Treasury through the same channel and the procedure that is followed by the Local Government units, as explained below.

Local Government

Municipalities and village authorities provide the National Treasury of the Republic with summarized reports concerning their monthly revenue and expenditure on a cash basis 20 days after the end of every month. The local authorities submit their reports electronically (by email) and these are then tabulated by the National Treasury and forwarded to CYSTAT for processing. It is worth mentioning that sanctions have been approved by the Ministry of Finance and are enforced in case of non-compliance to ensure completeness of the monthly data in a timely fashion. At the end of the fiscal year, municipalities also submit to the National Treasury and the Ministry of Finance their audited Financial Reports.

A cross-checking procedure is also performed as regards transfers from the budget to local authorities with the usage of the FIMAS data. This is very useful for consolidation purposes.

Social Security Funds

All transactions concerning the six social security funds are recorded in the FIMAS and the procedure followed for Central Government data is duplicated for this sub-sector as well. The Social Security funds also provide the GFS section with their annual final audited accounts. No further adjustments are required since these accounts are examined by external auditors using the international accounting standards and practices.

The elements used in the calculation of the output of the General Government sector in the kind-of-activity units with other non-market production are described in Chapter 3, as well as the statistical sources used for this purpose.

Own-account non-market production by the General Government sector is effected entirely in kind-of-activity units within that sector and falls under the heading of other non-market production. The sales of products and own-account GFCF by General Government units are excluded from the estimate. Own-account GFCF by General Government, if any, is classified in the respective asset categories which are described in section 5.10.

Final consumption expenditure by General Government is derived from the specific recording of government output. Only a small part of government output is actually sold at economically significant prices (market output). The major part of government output is paid out of public funds and provided free of charge to all sectors (non-market output). Because the allocation of government output to different users will encounter large problems, the government is by convention considered to be the consumer of its own output.

The final consumption expenditure of the General Government is calculated by the value of the goods and services produced by public bodies, i.e. the sum of intermediate consumption, compensation of employees, consumption of fixed capital and other taxes on production less other subsidies received by government. Social transfers in kind are also added, while sales by public bodies and output for own final use are deducted from the output total.

Table 5.9.3: Government final consumption expenditure, 2017 (€ million)

Intermediate consumption	P2		718,0
Compensation of employees, payable	D1	+	2.363,7
Consumption of fixed capital	P51C	+	448,4
Other taxes on production, payable	D29	+	0,0
Other subsidies on production payable	D39P	-	0,0
		=	3.530,1
Market output, output for own final use and payments for non-market output	P10	-	640,2
Operating surplus, net	B2N	+	105,1
Other non-market output	P132	=	2.995,0
Social benefits in kind-purchased market production, payable	D632	+	5,9
Government final consumption expenditure	P3	=	3.000,9

Intermediate consumption is made up of all the operations and maintenance expenses for all the General Government units. This includes expenditure on utilities, materials and supplies, repairs, rent, memberships, information services, office services, transport, travel, contractual and professional services, training, hospitality and incidental expenses;

Consumption of fixed capital (P.51C) is the reduction in value, which a fixed asset undergoes, because its economic life is limited. The assessment of capital consumption in respect of the NACE categories in the General Government sector is described in chapter 4.12.

The State pays no taxes on production and receives no subsidies on production.

Social benefits in kind are comprised of expenditure by authorities, particularly on social assistance and other support (e.g. student welfare, school buses, etc.).

Classification of the Functions of Government (COFOG)

Individual and collective consumption

Government services can benefit the community in an individual or collective manner. The functional classification of expenditure according to COFOG is used to distinguish between the individual and collective services provided by General Government. The COFOG functions are pre-defined so that they represent either individual or collective consumption.

COFOG is made up of the following divisions:

- 01 General public services;
- 02 Defence;
- 03 Public order and safety;
- 04 Economic affairs;
- 05 Environmental protection;
- 06 Housing and community amenities;
- 07 Health;
- 08 Recreation, culture and religion;
- 09 Education; and
- 10 Social protection.

The first six divisions (01-06) are by convention to be considered as collective expenditure. The remaining four divisions (07-10) are mainly considered as individual consumption expenditure, with the exception of the general administrative costs, which are still classified as collective expenditure.

Table 5.9.4: Individual/Collective consumption expenditure, 2017 (€ million)

Individual Consumption Expenditure	1.546,5
Collective Consumption Expenditure	1.454,4
Final consumption Expenditure for General Government	3.000,9

Table 5.9.5: General Government final consumption expenditure by function (COFOG), 2017, (€ million)

General public services	413,1
Defence	287,7
Public order and safety	325,7
Economic affairs	163,1
Environment protection	33,4
Housing and community amenities	179,8
Health	467,6
Recreation, culture and religion	107,7
Education	979,6
Social protection	43,2
Total final consumption expenditure of General Government	3.000,9

5.10 Acquisitions less disposals of produced fixed assets

5.10.1 Overview

The produced fixed assets include the following categories:

Table 5.10.1: Categories of produced fixed assets

AN.111	Dwellings (residential buildings)
AN.112	Other buildings and structures (non-residential buildings and other construction work)
AN.113	Machinery and equipment (motor vehicles, ships, aircrafts, ICT equipment, furniture, computer hardware and other machinery and equipment)
AN.114	Weapon systems (tanks, military vehicles, helicopters etc.)
AN.115	Cultivated biological resources (livestock for breeding, dairy and draught, new tree plantation and orchard development)
AN.117	Intellectual property products (R&D, mineral exploration, computer software and databases, entertainment, literary or artistic originals)

A table showing the acquisitions less disposals of fixed assets by NACE Sections and type of assets is shown below:

Table 5.10.2: Acquisitions less disposals of fixed assets by NACE Section, 2017 (€ million)

NACE Rev.2	AN.111	AN.112	AN.113 + AN.114	AN.115	AN.117	TOTAL
A	0,0	15,3	4,3	8,5	0,1	28,2
B	0,0	12,4	2,1	0,0	135,3	149,8
C	0,0	36,8	100,8	0,0	18,3	156,0
D	0,0	33,1	47,8	0,0	0,7	81,5
E	0,0	36,2	3,7	0,0	0,3	40,1
F	0,0	58,3	48,6	0,0	0,4	107,3
G	0,0	56,4	82,7	0,0	2,7	141,8
H	0,0	44,1	1.131,2	0,0	3,7	1.179,0
I	0,0	183,7	75,0	0,0	1,0	259,8
J	0,0	22,5	93,8	0,0	203,6	319,9
K	0,0	10,3	22,5	0,0	54,6	87,5
L	1.016,8	5,7	2,1	0,0	0,3	1.024,8
of which Imputed rentals of owner-occupied dwellings	1.016,8	0,0	0,0	0,0	0,0	1.016,8
M	0,0	11,3	21,0	0,0	26,7	59,0
N	0,0	1,0	34,2	0,0	0,3	35,4
O	0,0	155,4	201,8	0,0	1,8	359,0

NACE Rev.2	AN.111	AN.112	AN.113 + AN.114	AN.115	AN.117	TOTAL
P	0,0	34,3	24,4	0,0	55,8	114,5
Q	0,0	8,5	18,5	0,0	6,9	33,9
R	0,0	27,8	7,5	0,0	0,6	35,9
S	0,0	5,0	5,5	0,0	0,1	10,6
T	0,0	0,0	0,0	0,0	0,0	0,0
TOTAL	1.016,8	758,1	1.927,4	8,5	513,1	4.223,9

A table showing the acquisitions less disposals of fixed assets by institutional sectors and types of assets is shown below:

Table 5.10.3: Acquisitions less disposals of fixed assets by institutional sector, 2017 (€ million)

Sector	AN.111	AN.112	AN.113 + AN.114	AN.115	AN.117	TOTAL
S.11	0,0	372,9	1.294,4	6,7	315,8	1.989,8
S.12	0,0	10,3	22,5	0,0	54,6	87,5
S.13	0,0	233,4	251,3	0,0	55,0	539,6
S.14	1.016,8	138,6	336,9	1,8	82,2	1.576,4
S.15	0,0	2,9	22,3	0,0	5,5	30,7
TOTAL	1.016,8	758,1	1.927,4	8,5	513,1	4.223,9

A table showing the breakdown of intellectual property products (AN.117) into the subcategories is presented below:

Table 5.10.4: Breakdown of intellectual property products (AN.117), 2017 (€ million)

Subcategories	TOTAL
R&D	216,4
Software	150,6
Mineral Exploration	135,3
Other Intellectual Property	10,8
TOTAL	513,1

National Accounts (NA) section estimated the cost of ownership transfer of land based on information from the annual economic surveys. Specifically, the part of the questionnaire that refers to the Capital Investments includes a variable on the value of Lands and Plots purchased. These values for all activities are then multiplied by the percentage (5% or 8% depending of the value) paid to the Department of Lands and Surveys for the transfer of the land. The amount for 2017 is estimated at €3,7 million.

An excerpt from the Process Tables showing the values derived from individual categories of sources and values of conceptual, exhaustiveness (N1-N7) and balancing adjustments is shown below:

Table 5.10.5: Gross fixed capital formation final estimate, 2017 (€ million)

Basis for NA Figures	4209,6
Surveys & Censuses	1826,6
Administrative Records	291,7
Combined Data	2013,8
Extrapolation and Models	77,6
<i>Dwellings</i>	34,1
<i>Other E & M</i>	43,4
Other	0,0
Adjustments	14,3
Data validation	0,0
Conceptual	0,0
Exhaustiveness	17,2
<i>N3</i>	14,2
<i>N7</i>	3,0
Balancing	-2,9
Final estimate	4223,9

Adjustments due to balancing

The Supply and Use Tables (SUT) is a primary tool for the integration, validation and verification of the production and expenditure approaches at product level. During the balancing procedure, differences between supply and use are examined at product level, including the produced fixed assets which are classified in the GFCF, so that any discrepancies are eliminated. A detailed description of the SUT balancing procedure and the final adjustments performed are presented in chapter 6.

5.10.2 Main data sources and their conversion to national accounts results

The basic data sources regarding the acquisitions less disposals of tangible fixed assets (i.e. fixed capital formation) are the annual economic surveys. These surveys provide rich and ample information on the purchases of investment goods by NACE and by type of asset. Since the economic surveys cover the investments made by the resident units (i.e. acquisition less disposal of machinery and equipment), there is no need to distinguish between residents and non-residents. Nevertheless, purchases of new dwellings by non-residents are included in the construction survey and the relevant imputed rentals are part of the dividends (for more details see chapter 8).

In the survey questionnaires there are written instructions and definitions regarding fixed capital formation. For example, in the annual report for Agricultural Statistics, GFCF in Agriculture refers to

the expenditure by private agricultural holdings for the acquisition of capital assets, net of sales of similar second-hand or scrapped goods. The investments in the agricultural sector relate mainly to non-residential buildings, major repairs to existing buildings, other construction works, (dams, roads etc.), land improvement, boreholes, irrigation systems, expenditure on new tree plantations development, reforestation, machinery and transport equipment, and changes in animal breeding stock.

On the same line, the Industrial survey defines that the Expenditure on Fixed Assets in Manufacturing refers to all expenditure on fixed assets (new or used), purchased or manufactured by the enterprise for its own use, less sales of fixed assets. It also includes the cost of any major additions and alterations to existing fixed assets. Work done by the enterprise's own personnel was valued at the cost of labour, materials and any other costs allocated to this work. Fixed assets acquired from others were valued at the full cost incurred i.e. at the delivery price plus installation costs. Fixed assets acquired on a rental basis were excluded.

Nevertheless, the total value of any capital good that is acquired under hire-purchase and financial leasing schemes is recorded when the owner takes possession. In addition, exceptional and catastrophic losses by definition are excluded from the estimate of disposals of tangible fixed assets, although this phenomenon rarely occurs in practice.

Following the introduction of ESA 2010, written instructions were included in the questionnaire of the annual economy surveys indicating that the capital investments on fixed assets that are used in production for more than one year should be recorded as GFCF. Inexpensive tools for common operations and small devices (i.e. knives, hammers, screwdrivers) are recorded as Intermediate Consumption.

5.10.3 Detailed estimation methods by AN code

Dwellings (AN.111) and Other buildings and structures (AN.112)

1. New buildings and works – Constructors

Information on the construction component of Gross Fixed Capital Formation (GFCF) can be derived from the annual Construction survey, which is carried out by CYPSTAT. The three main categories of construction include: Residential buildings, non-residential buildings and civil engineering projects.

Residential buildings refer to the dwellings. Uncompleted dwellings (work-in-progress) are also included, to the extent that the ultimate user is to have taken ownership. Non-residential buildings include offices, warehouses, buildings for public entertainment, hotels, restaurants, schools,

hospitals etc. Civil engineering projects include highways, roads, airports, bridges, tunnels, harbours, dams, pipelines and other network, projects for electric power generation, construction for sport and recreation activities etc.

The relevant data is compiled by the Unit responsible for the Construction Statistics. The figures adopted by the NA section for GFCF are these related to Gross Output by type of project, as shown in the following table:

Table 5.10.6: Value of new Buildings and Works by type of project, 2017 (€ million)

Construction Code	Type of Project	Value
1	BUILDINGS	1.237,0
11	<i>Residential buildings</i>	<i>800,3</i>
111	Single houses	587,3
112	Buildings with more housing units	183,2
113	Communal housing units	29,8
12	<i>Non Residential buildings</i>	<i>436,7</i>
121	Hotels and buildings for tourism	186,0
122	Office buildings	77,3
123	Buildings used in trade	41,9
124	Transport and communication	14,6
125	Industrial buildings and stores	38,7
126	Services and welfare buildings	68,1
127	Other non residential buildings	10,1
2	CIVIL ENGINEERING PROJECTS	274,3
21	<i>Transport infrastructure</i>	<i>151,9</i>
211	Streets and highways	121,2
212	Railways	0,0
213	Airports	16,8
214	Bridges and tunnels	0,2
215	Water engineering projects	13,8
22	<i>Pipelines and other network</i>	<i>76,1</i>
221	Lines and pipeline systems	21,8
222	Urban network	54,3
23	<i>Complex projects in industrial areas</i>	<i>23,0</i>
24	<i>Other civil engineering projects</i>	<i>23,3</i>
241	Projects for sports & entertainment	22,2
242	Other civil engineering projects n.e.c.	1,1
	Gross Fixed Capital Formation - Constructors	1.511,3

In addition to the above mentioned data, information is obtained from the GFS section (FIMAS data) regarding the figures on new buildings and works for the General Government sector. This information is used for reconciliation between the annual economic survey data and the public sector data for the category of new buildings and works. For 2017, the additional amount which is classified in the category of new buildings and works for General Government is €56,4 million.

Regarding the estimation of land improvements (AN.1123) these are included in the GFCF estimates and in the construction output. They are mainly classified in the asset category “Civil engineering projects”. Since the land improvements are implicitly included in the estimation of GFCF, they are also included in the PIM calculations. It should be noted that the value of land purchased is not considered to be part of fixed capital formation and is excluded from these figures. The average lifetime of the land improvements is the same with the one of the respective asset (i.e. other structures) that they are classified in. It is mentioned that no additional information was available for the lifetime assumptions in the categories of other structures (AN.1122) and land improvements (AN.1123).

2. New buildings and works - Developers

The GFCF of the construction activity of the developers (NACE 41.1) is equal to the Gross Output minus the Intermediate Consumption, the changes in Inventories and the work in progress for which the ultimate user has not taken ownership. In that case, the work in progress is considered as changes in Inventories and does not impact GFCF. Analytical data is obtained from the “Construction and Land Development Survey” conducted by the Unit responsible for the Construction Statistics. A summary is shown in the table below:

Table 5.10.7: Construction part of developers, NACE 41.1, 2017 (€ million)

Output	428,7
<i>minus</i> Intermediate Consumption	308,9
<i>minus</i> Changes in Inventories	-47,4
<i>minus</i> Work in progress - ultimate user has not taken ownership	-1,0
Gross Fixed Capital Formation – Developers	168,2

It should be noted that the Intermediate Consumption of the developers concerns mainly the Services provided by subcontracting.

The value of the work in progress (€-1,0 million) for which the ultimate user has not taken ownership is obtained after multiplying the total value of the work in progress (€-11,2 million) by the percentage

of the dwellings that are left vacant and are built by developers (8,8% for 2017). This information is obtained from the “Buildings Permits and Housing Survey”.

3. Major repairs of dwellings

According to the Commission’s Regulation regarding the principles for estimating dwelling services (Regulation No 1722/2005) Cyprus has re-examined and improved the calculation method of the expenditure on maintenance and repairs.

Apart from the ordinary maintenance and repairs that are not typically carried out by the tenants and are recorded as intermediate consumption, there are also major repairs improving the value of the property and these are allocated to the GFCF. Smaller, routine repairs are treated either as private consumption or intermediate consumption, based on the criteria of the type of repair, its value and whether the expenditure is made by the owner or the tenant. In particular, the Household Budget Survey of 2015 reveals information regarding the type of repair, the value and the payment criterion.

Maintenance and repairs made by the owners were treated separately on the most analytical level available. COICOP code 04.3.1 (Materials for the maintenance and repair of the dwelling) expenditure was treated as private consumption for amounts equal or less than €2.000 (annually) otherwise as intermediate consumption. COICOP code 04.3.2 (Services for the maintenance and repair of the dwelling) was treated as intermediate consumption or GFCF. The criteria regarding thresholds were empirically set on a 7-digit level as seen on the table below. Major repairs were included as GFCF, i.e. bigger amounts for categories that based on their description fit the definition of improving the value of the property. However, smaller amounts for repairs that are recurring were considered as IC.

Table 5.10.8: Empirical thresholds for the 7-digit analysis (COICOP 04.3.2)

Coicop	Description	Recording as GFCF
04321	Services of plumbers	No (considered as IC)
04322	Services of electricians	No (considered as IC)
04323	Maintenance services for heating systems	If amount is greater than 3.000 euro
04324	Services of painters	No (considered as IC)
04325	Services of carpenters	If amount is greater than 8.000 euro
04329 01	Services of builders	If amount is greater than 8.000 euro
04329 02	Services of blacksmith	If amount is greater than 5.000 euro
04329 03	Services of other technicians	No (considered as IC)
04329 04	Manufacture of plasterboard	No (considered as IC)
04329 05	Replacement of windows / doors and placement of double glasses	If amount is greater than 8.000 euro
04329 06	Replacement of floor (from wood) or conversion to other kind of floor	If amount is greater than 5.000 euro

04329 07	Unification of internal area (abolition of walls)	No (considered as IC)
04329 08	Paving of the garden / fencing of the dwelling and replacement of the metal rails	If amount is greater than 6.000 euro
04329 09	Replacement / repair of the roof	If amount is greater than 5.000 euro
04329 10	Ceiling slab insulation	No (considered as IC)
04329 50	Other major repairs	If amount is greater than 8.000 euro

The extrapolation on the total population and the expenditure for 2017 resulted to a recording of €34,1 million for major repairs in GFCF for 2017.

4. Own-account construction

Households units are involved in some cases in the own-construction of dwellings. The work in question comprises construction work undertaken personally by the property owner and/or friends and relatives in the form of unpaid (voluntary work) third-party help. The estimation of the own-construction output was based on the information obtained from the questionnaires of the Building Permits Survey, in which there was an explicit reference for the cases where the house was built by the owner and its family.

The estimation includes both construction materials used (€4,1 million), recorded as intermediate consumption and the imputed labour cost (€10,1 million) that represents the gross value added. Consequently, output for 2017 is estimated at €14,2 million.

Apart from the own-account construction of dwellings by households, an exhaustiveness adjustment is made for own-account construction in Agriculture. This is based on information from the Agricultural section of CYSTAT. It includes both materials used (€0,9 million), recorded as intermediate consumption and the imputed labour cost (€2,1 million) that represents the gross value added. Consequently, output for 2017 is estimated at €3,0 million.

Summarizing, the GFCF for Construction for 2017 is estimating at €1.774,9 million, as shown in the table below:

Table 5.10.9: Construction, GFCF (€ million)

New buildings and works - Constructors	1.511,3
Lands and Plots & Old Buildings	5,3
New buildings and works - Administrative (FIMAS)	56,4
New buildings and works - Developers	168,2
Major Repairs of dwellings	34,1
Own-account construction - Households	14,2
Own-account construction - Agriculture	3,0
Balancing	-17,6
Gross Fixed Capital Formation - Construction	1.774,9

Machinery and equipment (AN.113) and Weapons systems (AN.114)

The component of machinery and equipment comprises of transport equipment, information and communication technologies (ICT) equipment and other machinery and equipment, other than that acquired by households for final consumption. More specifically, Other Machinery and equipment include furniture, computer hardware, musical instruments, sports equipment, etc.; Transport equipment includes motor vehicles, ships and aircrafts; Weapons systems include tanks, military vehicles and helicopters, missile carriers, etc.

Information on the acquisitions less disposals of Other Machinery and equipment and ICT is obtained on an annual basis from the economic surveys conducted by CYPSTAT. Additionally, data for NACE 64 is obtained from the Quarterly Profit and Loss Survey (QPLS), while data for the public investments is obtained from the Government Finance Statistics section of CYPSTAT. Data is compared with the imported capital goods relevant to the machinery and equipment, which are provided by the Foreign Trade Statistics section of CYPSTAT.

Data for investments on Weapons systems is obtained from the Ministry of Defence on a monthly basis and includes new acquisitions (imports), as well as maintenance and repairs. It should be noted that a distinction is made for military inventories, which does not impact GFCF and are recorded in the changes in Inventories. Data for Weapons systems is treated as confidential.

For 2017, the value of Other Machinery and equipment, ICT and Weapons systems accounted for €637,1 million.

Data for investments on Motor vehicles is obtained from annual economic surveys. For reconciliation and comparison purposes of the survey data, a report on "Registration of motor vehicles" is prepared by CYPSTAT, which provides detailed data for all motor vehicle registration categories, i.e. private saloon cars, taxis, self-drive cars, buses, heavy goods vehicles, light goods vehicles, motor cycles etc.

Regarding Aircrafts, information on the acquisitions less disposals is obtained from the Foreign Trade Statistics section of CYSTAT, which provides the NA with the relevant figures for imports and exports (airplanes, helicopters, parts of airplanes and helicopters etc.). For year 2017, the total investments on aircrafts were €97,1 million including SUT balancing adjustments.

Table 5.10.10: GFCF - Aircrafts (€ million)

Aircrafts	97,1
Balancing	0,0
GFCF – Aircrafts	97,1

Regarding Ships, information on the acquisitions less disposals is obtained from the Foreign Trade Statistics section of CYSTAT, which provides the NA with the relevant figures for imports and exports of ships on a monthly basis. For year 2017, the total investments on ships was €1.083,2 million including SUT balancing adjustments.

Table 5.10.11: GFCF - Ships (€ million)

Ships	996,6
Balancing	86,6
GFCF - Ships	1.083,2

In relation to the treatment of transactions in existing goods in the GFCF estimates, according to ESA 2010, it has the following consequences:

- a) when the sale of an existing fixed asset or valuable takes place between two resident producers, the positive and negative values recorded for gross fixed capital formation cancel out for the economy as a whole except for the costs of ownership transfer;
- b) when an existing immovable fixed asset (e.g. a building) is sold to a non-resident, the latter is treated as purchasing a financial asset, i.e. the equity of a notional resident unit. This notional resident unit is then deemed to purchase the fixed asset. The sale and purchase of the fixed asset take place between resident units;
- c) when an existing movable fixed asset, such as a ship or aircraft, is exported, no positive gross fixed capital formation is recorded in the economy to offset the seller's negative gross fixed capital formation;
- d) durable goods, such as vehicles, may be classified as fixed assets or as consumer durables depending upon the owner and the purpose for which they are used. If the ownership of such a good is transferred from an enterprise to a household to be used for final

consumption, negative gross fixed capital formation is recorded for the enterprise and positive consumption expenditure for the household. Where ownership of such a good is transferred from a household to an enterprise, for the household negative final consumption expenditure is recorded and for the enterprise positive gross fixed capital formation is recorded;

- e) transactions in existing valuables are to be recorded as the acquisition of a valuable (positive gross capital formation) by the purchaser and as the disposal of a valuable (negative gross capital formation) by the seller. In case of a transaction with the rest of the world, the import or export of a good is to be recorded. The sale of a valuable by a household is not to be recorded as negative final consumption expenditure;
- f) when existing military durables are sold abroad by the government, this is recorded as an export of goods and as negative fixed capital formation by the government.

A summary table of the data recorded in the GFCF for Machinery and equipment and Weapons systems is shown below:

Table 5.10.12: Machinery and equipment and Weapons systems, AN.113 + AN.114 (€ million)

Transport equipment (AN.1131)	1.196,9
- Motor vehicles	103,2
- Aircrafts	97,1
- Ships	996,6
ICT equipment (AN. 1132)	73,2
Other machinery and equipment (AN.1139) and Weapons systems (AN.114)	632,6
Balancing	24,8
GFCF - Machinery and equipment and Weapons systems	1.927,4

Cultivated biological resources (AN.115)

This category includes the new tree plantation and orchard development as well as the livestock for breeding, dairy and draught. The total amount for 2017 is estimated to €8,5 million.

New plantations (including wines and shrubs) cultivated for products they yield year after year, including those cultivated for fruits and nuts. Data is provided by the Agricultural section of CYPSTAT. For 2017 its value amounts for €2,3 million.

Livestock includes animals that are kept for the products they provide year after year. It comprises breeding stocks of poultry, dairy cattle, draught animals, sheep or other animals used for wool

production. Data is provided by the Agricultural section of CYSTAT. For 2017 its value amounts for €6,2 million.

Intellectual property products (AN.117)

This category includes fixed assets that consist of the results of R&D (AN.1171), mineral exploration and evaluation (AN.1172), computer software and databases (AN.1173) and entertainment, literary and artistic originals (AN.1174).

1. *Research and Development (AN.1171)*

ESA 2010 introduced the inclusion of the results of Research and Development (R&D) as intellectual property under the heading of produced assets. ESA 2010 recognizes expenditures for both purchased and own-account R&D as fixed investment and the depreciation of these assets as consumption of fixed capital.

The primary source for the measurement of Research and Development is the R&D survey carried out by CYSTAT according to the definitions, the concepts and the methodology of the Frascati Manual. The survey quantifies human and financial resources used by the Government, Non-Profit Institutions Serving Households (NPISH) and business enterprises for the development of R&D. The own-account R&D produced by the Government and the NPISH is recorded as non-market output, while the R&D produced by business enterprises is recorded as market output. It should be noted that according to survey evidence, both market and non-market producers do not purchase R&D, thus all the R&D development is produced for own-account.

The R&D survey is conducted using as a statistical unit the concept of enterprise. In Cyprus the great majority of institutional units have a relatively small size and it's not very common to have large enterprises which are engaged in several economic activities (KAUs).

Furthermore, since the R&D survey records all expenditure on R&D, any expenditure made by the government on freely available R&D and also any expenditure that may lead to unsuccessful R&D are included in the calculations of R&D output and GFCF.

For own-account market producers in the production approach, the output increases as an output for own final use (P.12) and value added increases by the amount of R&D costs, plus a mark-up. In the expenditure approach, gross fixed capital formation increases by the same amount as value added.

For own-account non-market producers in the production approach, R&D activities are registered as output for own final use (P.12) and the corresponding expenditure as gross capital formation (P.51). Therefore, non-market output (P.13) and final consumption expenditure of the non-market producer decrease. The costs are increased by the amount of consumption of fixed capital. In the expenditure approach, the final consumption expenditure is also increased by the amount of consumption of fixed capital.

To ensure consistency between the Frascati Manual methodology and the national accounts concepts the Manual on measuring Research and Development in ESA 2010 was applied. The agreed templates that are used to estimate Output and GFCF of R&D for year 2017 are presented below.

Table 5.10.13: Output of Research and Development, 2017 (€ million)

		S11		S12		S13		S14		S15		TOTAL	
		+	-	+	-	+	-	+	-	+	-	+	-
1	Frascati Manual Intramural expenditures on R&D	49,9		0,0		47,4		0,0		12,9		110,2	
2	Subtract payments for licences to use intellectual products (principally R&D assets, such as patents) that should be recorded as GFCF		0,0		0,0		0,0		0,0		0,0		0,0
3	Subtract expenditure on own-account production of software		0,0		0,0		0,0		0,0		0,0		0,0
4	Add payments to postgraduate students not included in FM data	2,5		0,0		3,3		0,0		0,0		5,8	
5	Subtract capital expenditures		3,0		0,0		1,9		0,0		1,3		6,3
6	Add other taxes on production not included in FM data	2,2		0,0		0,0		0,0		0,2		2,5	
7	Subtract other subsidies on production		0,0		0,0		0,0		0,0		0,0		0,0
8	Add extramural purchases of R&D that should be recorded as intermediate consumption. Applies only to R&D industry	0,0		0,0		0,0		0,0		0,0		0,0	
9	Sub-Total (1 to 8): current expenditures	54,6	3,0	0,0	0,0	50,7	1,9	0,0	0,0	13,1	1,3	118,5	6,3
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	13,6		0,0		5,4		0,0		1,4		20,4	
12	- Option 2: As cost of capital services measured with a PIM	0,0		0,0		0,0		0,0		0,0		0,0	
13	Adjustment for exhaustiveness	0,0		0,0		0,0		0,0		0,0		0,0	
14	Other adjustments	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
15	Balance : Output of R&D		65,2		0,0		54,2		0,0		13,2		132,6

Following, is a detailed description of the table of Output of Research and Development for year 2017:

1. Intramural expenditures from the R&D survey, following the Frascati Manual are the starting point of the calculations. This data does not include the cost of subcontracted R&D.
2. Licenses to use intellectual property products should be deducted. However, according to the R&D survey any payments related with the outright ownership of these products are already excluded.
3. Own account production of software should be subtracted but no such payments were identified from the R&D survey.
4. Concerning the inclusion of payments to postgraduate students in the calculation of R&D output, this expenditure does not appear in Frascati Manual but from NA point of view it should be included in R&D output. Estimates from NA are added to S11 for the case of trainees and S13 for the case of research carried out by postgraduate students at public universities.
5. Capital expenditures are separately identified from the Frascati data and are subtracted.
6. Estimates on other taxes on production based on the available government data for taxes are added.
7. No subsidies on production concerning R&D were identified in the government accounts.
8. Any extramural purchases of R&D relating to the R&D industry (NACE 72) should be added. Nevertheless, this line is left empty since the recording of the Frascati data used is net of subcontracted R&D.
9. After applying the previous adjustments to the Frascati Manual expenditures, current expenditures are summed up.
- 10-12. An estimate of consumption of fixed capital (CFC) plus a return to capital (mark up) for market producers are included in the calculations.
- 13-14. No necessary exhaustiveness or other adjustments were considered necessary.

The final result of the table is the output of the performance of R&D.

Table 5.10.14: Gross Fixed Capital Formation in Research and Development, 2017 (€ million)

		S11		S12		S13		S14		S15		TOTAL	
		-	+	-	+	-	+	-	+	-	+	-	+
1	R&D output		65,2		0,0		54,2		0,0		13,2		132,6
2	Add Imports of R&D		84,1		0,0		0,0		0,0		0,0		84,1
3	Add trade margins		0,0		0,0		0,0		0,0		0,0		0,0
4	Add taxes on products		0,0		0,0		0,0		0,0		0,0		0,0
5	Subtract subsidies on products	0,0		0,0		0,0		0,0		0,0		0,0	
6	Subtract extramural purchases of R&D that should be recorded as intermediate consumption. Applies only to R&D industry	0,0		0,0		0,0		0,0		0,0		0,0	
7	Subtract Acquisitions of R&D not expected to provide a benefit	0,0		0,0		0,0		0,0		0,0		0,0	
8	Subtract changes in inventories of finished R&D	0,0		0,0		0,0		0,0		0,0		0,0	
9	Subtract Exports of R&D	0,3		0,0		0,0		0,0		0,0		0,3	
10	Add Net purchases of R&D between domestic sectors												0,0
11	Sub-Total	0,3	149,4	0,0	0,0	0,0	54,2	0,0	0,0	0,0	13,2	0,3	216,7
12	Balance: Total GFCF of R&D	149,1		0,0		54,2		0,0		13,2		216,4	
13	Add/subtract capital transfers of R&D assets between sectors in capital account (not available)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

Following, is a detailed description of the table of Gross Fixed Capital Formation in Research and Development for year 2017:

1. The gross output of R&D in the first table is the starting point of the calculation of GFCF of R&D.
2. R&D imports were identified from the information provided from the Central Bank of Cyprus which is responsible for the compilation of the BoP data.
3. No trade margins were identified separately in the case of Cyprus.
4. No taxes on products concerning R&D were identified in the government accounts.
5. No subsidies on products concerning R&D were identified in the government accounts.
6. Any extramural purchases of R&D relating to the R&D industry (NACE 72) should be subtracted. Nevertheless, this line is left empty since the recording of the Frascati data used is net of subcontracted R&D.
7. Acquisitions of R&D not expected to provide a benefit are redundant according to the Manual on measuring Research and Development in ESA 2010.
8. In theory, changes in inventories of finished R&D should be deducted. "In practice, these changes are difficult to identify and the assumption is made that R&D output is acquired as a capital asset as it is produced. So this row will have zero values" (Manual on measuring Research and Development in ESA 2010).
9. R&D exports were identified from the information provided from the Central Bank of Cyprus which is responsible for the compilation of the BoP data.
10. Net purchases of R&D between domestic sectors need to be added. No adjustment was performed, since according to survey evidence in the case of Cyprus all the R&D is produced for own account.
11. The final result is the total gross fixed capital formation of R&D

2. Mineral exploration and evaluation (AN.1172)

Several companies have initiated since 2009 evaluation projects for the natural resources in the Exclusive Economic Zone of Cyprus, for the exploration and production of petroleum and natural gas. Data for investment on mineral exploration is presented in the table below.

The expenditures made include license and acquisition costs, the field evaluation and development, general exploration costs, exploration drilling costs (incl. transportation costs), environmental studies etc. and they are classified in GFCF. It should be noted that since the expenditures include

services provided by the mother company, a similar recording is made in the imports of services and thus there is no actual impact to the GDP.

Information on these expenditures is obtained directly from the relevant companies in the form of a detailed reporting. Data sent to CYPSTAT is treated as confidential.

Table 5.10.15: Mineral exploration (€ million)

Annual Survey results	129,6
Balancing	5,6
GFCF - Mineral exploration and evaluation	135,3

3. Computer software and databases (AN.1173)

Information on the investments on computer software is obtained on an annual basis from the economic surveys conducted by CYPSTAT. For 2017 it amounts to €110,3 million, including SUT balancing adjustments, which are presented below. This value does not include own-account production of software.

Table 5.10.16: Computer software (€ million)

Annual Survey results	126,8
Balancing	-16,5
GFCF - Computer software and databases	110,3

Following the recommendations of Eurostat on the treatment of Software (GNIC/026A), the questionnaire of the annual economic surveys was revised accordingly, in order to incorporate information on software. It is clearly stated that software is treated as GFCF if it is used more than one year and its installation costs should be also included in this estimate. It is mentioned that data on computer software and databases as obtained from the annual economic surveys exclude hardware consultancy. The latter is included in the expenses of the enterprise. Regarding the delimitation between GFCF and intermediate consumption for software, written and oral instructions are given to the enumerators of the annual economic surveys that an investment is considered as GFCF in case where fixed assets are produced assets used in production for more than one year. It should be noted that subcontracting of software services, maintenance, repair and purchases of software to be used in production for less than 1 year is treated as intermediate consumption. The secondary production of software by non-software industries (other than NACE 62) is included in output of computer software. The estimates of own-account software for NACE 62 exclude time spent on the development of custom software to be sold, while these estimates include the time spent on the development of originals packaged software and for software that is

used only for the company itself. Non-market output is valued as sum of costs and thus comprises also GFCF of fixed assets, including software.

In addition, software expenditure is recorded in the HFCE via the Household Budget Survey, in the BoP by identifying payments related to software services and in the imports and exports of software goods, where the full value (carrier (i.e. CD-ROM), support and licence) is recorded. The software content is identified in the CNA codes in the Foreign Trade Statistics.

As already mentioned above, data from the annual economic surveys does not include own-account production of software. Therefore, estimates of the own-account production of software are produced in order to include a mark-up for operating surplus. In order to calculate the mark-up of production of software, statistical information from the annual surveys covering the services activities was used. More precisely, data was extracted from the questionnaires covering the activities under NACE Rev.2, 58.29 (other software publishing) and NACE Rev.2, 62.01 (computer programming activities). The data used was Gross Output and Gross Operating Surplus.

The mark-up was estimated by calculating a 3-year moving average adjustment factor applying the following formula:

$$\text{Gross Operating Surplus} / (\text{Gross Output} - \text{Gross Operating Surplus})$$

The results for the adjustment factor calculations are shown in the table below:

Table 5.10.17: Mark-up adjustment factor for own-account software, 2017

	2015	2016	2017
Gross Output (€ million)	9,4	12,3	15,4
Gross Operating Surplus (€ million)	1,2	2,1	3,0
Adjustment factor	15%	20%	24%

For 2017, a 3-year (2015-2017) moving average adjustment factor of 20% is calculated.

In order to estimate the ratio for the own account production of software, CYPSTAT conducted an ad-hoc telephone survey covering a small sample of the most important economic activities. Enterprises were asked to provide information on the number of persons engaged in the production of own-account software. For NACEs under primary and secondary activities, as well as for public sector it was concluded that there were no persons that had as only occupation the production of own-account software. Only the activities under NACE Rev.2, J (Information and Communication), NACE Rev.2, K (Financial and insurance activities) and NACE Rev.2, M (Professional, scientific and technical activities) had personnel specifically working in the development of software for own-account. The percentage of own account production of software to the total GFCF on software (obtained from

economic surveys), according to the labour input method, is estimated around 26%. It is mentioned that, in the case of any balancing adjustment that is made within the SUT framework for GFCF on software, this adjustment would reflect to a change in the percentage of the own account software to the total capital expenditure on software.

The mark-up for the own-account production of software is estimated at €6,6 million and it is calculated by multiplying the 3-year moving average adjustment factor (2015-2017) with the amount of own account software (i.e. $33,6 * 20\%$).

The value of Gross Fixed Capital Formation for software, after the inclusion of a mark-up for operating surplus in the estimates of the own-account software for the year 2017, is shown in the table below:

Table 5.10.18: GFCF on software (inc. mark-up), (€ million)

GFCF excl. mark-up	110,3
Own Account software	33,6
Mark-up	6,6
GFCF incl. mark-up	150,6

4. Entertainment, literary or artistic originals (AN.1174)

Production of TV programs

Data on television production of originals produced by television stations is obtained from the economic surveys conducted by CYSTAT. It involves the productions of all the major Cypriot TV channels. In 2017, this investment accounted for €7,6 million including SUT balancing adjustments. However, these estimates do not include a mark-up for operating surplus.

Table 5.10.19: Production of TV programs (€ million)

Annual Survey results	6,9
Balancing	0,7
GFCF - Production of TV programs	7,6

The criterion that is used to define GFCF of entertainment, literary and artistic originals in the economic surveys to collect data from TV channels it must be the final product and broadcasted for a full TV season (i.e. October to May). TV programmes cancelled after a couple of months (i.e. due to low ratings) are recorded as IC and not as GFCF. It should be noted that a TV program which is expected from its beginning to last for a specific period (i.e. a talent show of 4 months) is also

considered as an investment. It should be mentioned that TV and radio flow programmes (e.g. news and sports programmes) are excluded from GFCF of originals.

Entertainment, literary and artistic originals are depreciated using the PIM. In Cyprus, TV programs are broadcasted continuously in syndication and thus there is no reason to over depreciate this asset in the early years. The lifetime assumption for TV programmes is set at 20 years, due to their continuous and long-term syndication. Payments for licenses to use entertainment, literary and artistic originals are recorded as sales and purchases of services and these are included in the data obtained from the annual economic surveys.

NA investigated the possible impact of Gross Fixed Capital Formation of entertainment, literary and artistic originals. After the examination of the survey questionnaires, it was recognized that items with significant expenditure within NACE Rev.2, 59.11 (Motion picture, video and television programme production activities) were already included under the fixed asset category "Other equipment". The survey questionnaire asks the enterprises to include fixed assets produced for own use. This own-account production, is according to the questionnaire, valued as the sum of production costs. The Task Force on entertainment, literary and artistic originals recommends that the value of film, TV and radio programs should be measured by production costs, including a mark-up for operating surplus. NA section estimated the operating surplus with regard to the own-account production of film, TV and radio programs.

In order to calculate the mark-up of production of film, TV and radio programs, statistical information from the annual surveys covering the Services activities was used. More precisely, data was extracted from the questionnaires covering the activities under NACE Rev.2, 59.11 (Motion picture, video and television programme production activities). The data used was Gross Output and Gross Operating Surplus.

It should be noted that gross instead of net operating surplus was used for the calculation of the mark-up, since the own-account production in the annual services survey includes only the sum of the production costs of intermediate inputs and of compensation of employees and not the Consumption of Fixed Capital.

The mark-up was estimated by calculating a 3-year moving average adjustment factor applying the following formula:

$$\text{Gross Operating Surplus} / (\text{Gross Output} - \text{Gross Operating Surplus})$$

The results for the adjustment factor calculations are shown in the table below:

Table 5.10.20: Mark-up adjustment factor for production of TV programs

	2015	2016	2017
Gross Output (€ million)	16,4	21,1	25,2
Gross Operating Surplus (€ million)	3,9	4,0	4,0
Adjustment factor	32%	23%	19%

For 2017, a 3-year moving average (2015-2017) adjustment factor of 25% is calculated and the mark-up is estimated at €1,7 million (25%*€6,9 million).

The value of Gross Fixed Capital Formation, after the inclusion of a mark-up for operating surplus in the estimates of the own-account production of film, TV or radio programs for the year 2017, is shown in the table below:

Table 5.10.21: Production of TV programs (inc. mark-up)

	€ million
Own account production of TV programs	6,9
Balancing	0,7
Mark-up	1,7
GFCF incl. mark-up	9,3

The total value for the own-account production of TV programs, including a mark-up, for the year 2017 is estimated at €9,3 million.

Literary and artistic originals

Data on royalties should be used for the valuation of literary and artistic originals in accordance with the related GNIC 475 recommendation.

Specifically, Cyprus investigated the existence of data on royalties for literature, music and photographic / image originals. This data refers only to royalties paid to the writers of books, since the writing of plays by Cypriots is almost nonexistent. It should be noted that according to the Business Register there are only few writers registered with insignificant revenue. Data on royalties for music is also considered as nonexistent, since in Cyprus there are only three sound recording companies who act as intermediaries to Greek sound recording companies.

The recommendation states that the value of literary originals should be measured by the modeling of royalty flows using the formula $W_j = H_j * (1+r_j-i_j)$, where W_j = present value of expected future royalty flows of new produced originals in year j, H_j = total of royalties paid in year j, r_j = growth rate of total royalties in year j and i_j = interest rate used for discounting.

Since the royalties should refer to the new and old titles of books produced each year, an estimate was made in order to calculate the sales of the new titles. In the absence of relevant statistics, this estimate was based on statistics for the average price of books and on evidence from ad-hoc survey for the number of books sold per new title. The percentage of sales of new titles to the total of sales of books was estimated to be 6%. Since the value of royalties had a stable relationship with the value of sales, this percentage was applied for the whole period to the value of Royalties for new & old titles, in order estimate the Royalties for new titles only.

Regarding the formula for the calculation of W_j , the Consumer Price Index was used for discounting instead of an interest rate, since it is considered as a more appropriate and homogeneous index.

A five year moving average of this index (i_j), as well as of the growth rate of total royalties (r_j) was used for the calculation of the formula. A summary of the results is shown in the table below:

Table 5.10.22: Literary and artistic originals

H_j	Royalties (new+old titles) (€ million)	1,5
r_j	growth rate of royalties	-0,8%
i_j	consumer price index	-1,0%
W_j	Present value of royalties (€ million)	1,5

The total value for literary and artistic originals in 2017 is estimated at €1,5 million.

A summary table for the investments on Intellectual Property is shown below:

Table 5.10.23: Intellectual Property Products AN.117 (€ million)

R&D (AN.1171) and Mineral Exploration (AN.1172)	346,1
Computer Software and databases (AN.1173)	167,0
Entertainment, literary or artistic originals (AN. 1174)	10,1
Balancing	-10,1
GFCF - Intellectual Property Products	513,1

5.11 Changes in inventories

Stocks refer to the value of all inventories owned by the enterprise i.e., the total amount of goods that an enterprise keeps during the production process. Change in inventories is the change that occurs between the beginning and the end of the year. The valuation of finished products is at producers' average selling prices during the year under review (incl. excise taxes where applicable) and on the other stocks at their book values. The use of average prices in the valuation of finished products is an acknowledged departure from the conceptually correct valuation (ESA2010 §3.151) and it is done as approximation procedure in accordance with §3.153. It must be admitted though that the treatment of changes in inventories is a very difficult issue to be treated properly.

Misclassification problems can be identified in the case of growing crops, namely trees, which at present are classified to GFCF and are not included in the inventories. Sales of tree plants indicate that the significance of this figure compared to the total cultivated areas covered with trees is minimal and therefore, trees not yet in production (work in progress) are not recorded separately from the total number of trees. Naturally, additions to and withdrawals from work in progress is valued following the same methodology that is applied for the finished products.

It should be noted that unfinished animals for slaughter are excluded from gross fixed capital formation and are included in the inventories. All animals are recorded at the end of each year by type of animal, age and gender; therefore, we can distinguish between animal stocks for slaughter and for breeding.

Uncompleted structures recorded under work in progress include only those uncompleted structure that are not produced under a contract of sale agreed in advance or on own-account.

From reference year 2015 onwards work in progress include partially completed research for legal or consultant's dossier, film productions and computer programs.

The following categories of stocks are provided from the annual economic surveys: Finished goods, Work-in-progress, Raw materials and supplies, Fuels and Goods for Resale. The sources enable a comprehensive estimate of all inventory categories listed in ESA 2010 §3.148 and no component of changes in inventories is calculated as a residual. The recurrent losses of inventories are included in the overall value of the change in inventories in the source data. The information is provided from the annual economic surveys and it is limited to the above general categories of stocks and their values, without any further analysis on their composition in terms of commodities (CPA).

The table below shows the statistical source of stock of inventories by economic activity:

Table 5.11.1: Statistical Data Sources

NACE	DATA SOURCE
A	Agriculture Production Survey
B, C, D, E	Industrial Production Survey
F	Construction Survey
G	Wholesale and Retail Trade Survey
H	Transport Survey
I, J, L, M, N, P, Q, R, S	Services Survey
K	Administrative Sources
O	Administrative Sources

Changes in inventories are valued as recorded in economic accounts and are consistent with national accounts valuation of other transactions in products.

Opening stocks of Inventories in year t are corrected to the level of closing stocks of inventories of the previous year t-1. Corrected opening stocks in year t are used to calculate changes in inventories in t.

A summary table of the initial estimates by category of stock is presented below:

Table 5.11.2: Changes in Inventories – Initial Estimate (€ million)

	Category of stock	Opening Stock 01/01/2017	Closing Stock 31/12/2017	Changes in Inventories 2017
a)	Finished goods	1.555,6	1.489,6	-66,1
b)	Work-in-progress	175,5	185,7	10,2
c)	Materials and supplies	531,7	592,2	60,4
d)	Fuels	81,4	89,8	8,4
e)	Goods for resale	2.008,8	2.118,3	109,5
	Initial Estimate Total	4.353,0	4.475,5	122,5

The above table is then reformed in accordance with the ESA2010 presentation:

Table 5.11.3: Changes in Inventories – Final Estimate 2017 (€ million)

	Category of stock	Initial Estimate	Holding Gains	Changes in Inventories
a)	Materials, supplies and fuels	68,9	15,9	53,0
b)	Work-in-progress	10,2	0,5	9,6
c)	Finished goods	-66,1	2,9	-69,0
d)	Goods for resale	109,5	-33,3	142,8
	Total	122,5	-14,0	136,5
	Balancing Adjustment			-152,2
	Final Estimate	122,5	-14,0	-15,8

The following table summarizes and presents the changes in inventories by category after balancing procedure:

Table 5.11.4: Changes in inventories by type and by NACE, 2017 (€ million)

NACE	Finished goods	Work-in-progress	Materials and supplies	Fuels	Goods for resale	Total
A	6,6	0,0	0,0	0,0	0,0	6,6
B	0,4	0,1	0,1	3,1	0,0	3,6
C	5,1	5,5	23,6	3,3	5,3	42,8
D	0,0	0,0	14,3	0,4	0,0	14,6
E	-0,1	0,0	0,1	0,4	0,0	0,4
F	-78,2	5,1	6,0	0,0	-0,8	-67,9
G	0,0	0,0	-0,1	0,0	103,6	103,5
H	0,0	0,0	2,4	1,2	-0,6	3,0
I	0,0	0,0	0,3	0,0	0,1	0,4
J	0,0	-0,1	-1,9	-0,1	1,0	-1,0
K	0,0	0,0	0,0	0,0	0,0	0,0
L	0,0	0,0	-0,1	0,0	0,0	-0,1
M	0,0	-0,4	0,1	0,0	0,0	-0,4
N	0,0	0,0	0,1	0,0	0,8	0,9
O	0,0	0,0	14,4	0,0	0,0	14,4
P	0,0	0,0	0,0	0,0	0,1	0,1
Q	0,0	0,0	0,4	0,0	0,0	0,4
R	0,0	0,0	0,1	0,0	0,1	0,1
S	0,0	0,0	0,9	0,0	0,1	0,9
T	0,0	0,0	0,0	0,0	0,0	0,0
U	0,0	0,0	0,0	0,0	0,0	0,0
Initial Estimate	-66,1	10,2	60,4	8,4	109,5	122,5
Holding Gains	2,9	0,5	-0,3	16,2	-33,3	-14,0
Initial Estimate excluding holding gains	-69,0	9,6	60,8	-7,8	142,8	136,5
Balancing Adjustment	-39,7	5,0	-23,7	6,2	-100,0	-152,2
Changes in Inventories (Final Estimate)	-108,6	14,6	37,0	-1,6	42,8	-15,8

In order to accommodate the needs of the SUT for the balancing procedure, the following approach is adopted to allocate the inventory categories to CPA:

Finished goods and Work-in-progress

For the stocks categories “Finished goods and Work-in-progress” a 3-digit CPA is allocated to each 3-digit NACE under the general assumption that enterprises hold finished goods or work-in-progress in stocks only concerning their predominant commodities produced.

Materials and Supplies

For this category, the general assumption is that only the most important raw materials and supplies are held in stock, therefore the CPA allocation follows the structure of the relevant analysis of materials and supplies that are used as intermediate inputs in each 2-digit NACE.

Fuels are collected separately and recorded in the relevant CPA.

Goods for resale

In this category the main assumption is that enterprises, normally trade goods that are characteristic to their general activity only. Therefore, a CPA identical to each 3-digit NACE is assigned to the respective inventory item.

In national accounts the technical procedure of measuring the changes in inventories and holding gains/losses follows the conventional international method of calculation. Namely, the values of inventories by economic activity and by type at the beginning and at the end of the year are revalued, in order to exclude holding gains and losses. For each NACE Activity, the Opening and Closing Stock is recorded for a specific period (i.e. Opening Stock 1/1/2017 and Closing Stock 31/12/2017). This book value of stocks includes finished goods and work-in-progress and goods for resale, as well as materials, supplies and fuels.

To achieve the consistent recording of changes in inventories and holding gains/losses in the production, income and expenditure estimates the following procedure is followed:

Concerning the production approach, the holding gains of the inventories of finished goods, work in progress and goods for resale are deducted from the estimates of output. The holding gains of the inventories of materials, supplies and fuels are added to intermediate consumption.

Regarding the expenditure approach, holding gains/losses are excluded from final estimates of changes in inventories (P52), as it is also visible in Table 5.11.3.

In the income approach the holding gains/losses are implicitly excluded from the Gross Operating Surplus which is a residual item.

The book value of the opening stocks is then converted to nominal value, by using specific price indices for each (3-digit) NACE Activity according to branch and stock characteristics. Annual Price Indices used in a breakdown by industry for each NACE activity are shown in the table below:

Table 5.11.5: Price Indices

NACE	TYPE OF PRICE INDICES
01	Agricultural price indices – output
08 to 38	Industrial producer price indices (PPI)
41 to 43	Construction producer price index (CPPI)
45 to 47	Harmonized indices of consumer prices (HICP)
49-66	Average price indices of branches where producer price indices are available
68	RPPI (Residential Property Price Index)
69-96	Average price indices of branches where producer price indices are available

From the real stocks at the beginning of the observed year and at the end of the observed year, the real change in stocks per branch and type of stock is determined as

real change of stock = “book value 31/12/t” – “book value 1/1/t” .

In addition, the change of nominal stock is calculated for each type of stock as change of

nominal stock = “book value 31/12/t” – “ (book value 1/1/t * index t / index t-1) ” .

The difference between the real change of stock at book value and the change of nominal stock is then used for the adjustment of the surveyed production values (stock output) and intermediate consumption (stock input), thereby eliminating holding gains and losses from the stock-keeping. In other words

holding gains/losses = “real change of stock” – “change of nominal stock” .

A numerical example for finished goods for NACE 10.1 (Processing and preserving of meat and production of meat products), the numerical adjustment for change in inventories of finished goods in 2017 is as follows:

Book value 01/01/2017 = €5,48 million

Book value 31/12/2017 = €4,82 million

PPI 2016 = 98,87

PPI 2017 = 101,26

Real change of stock =

book value 31/12/2017 – book value 01/01/2017 = 4,82-5,48 = -0,66

Nominal change of stock =

book value 31/12/2017 – [book value 01/01/2017* (index 2017 / index 2016)]= 4,82-
[5,48*(101,26/98,87)]=-0,79

Holding gains/losses in € million =

Real change of stock - Nominal change of stock= -0,66-(-0,79)= 0,13

5.12 Acquisitions less disposals of valuables

Valuables include the following types of goods:

- Precious stones and metals
- Jewellery fashioned out of precious stones and metals
- Antiques and other art objects, such as paintings and sculptures, and collectors' items

Data for all three categories is obtained by the Foreign Trade Statistics section of CYPSTAT and it includes imports minus exports of these valuables. For 2017 the net value is equal to €-18,7 million.

In addition, there is a local production of paintings and sculptures that is recorded under the item of valuables and is equal to the Output of NACE 90.03.2, Activities of painters, sculptors, engravers etc. This information is obtained from the annual economic surveys and for 2017 it amounts to €3,5 million.

Regarding the presentation of the data for acquisitions less disposals of valuables, these are recorded under "Combined data", since both information from "Administrative records" (Foreign Trade Statistics) and "Surveys & Censuses" (annual economic surveys) is used.

The total value of acquisitions less disposals of valuables (P.53) in 2017 is €-15,2 million as shown in the table below.

Table 5.12.1: Acquisitions less disposals of valuables, € million

	Precious metals and stones AN.131	Antiques and other art objects AN.132	Other valuables AN.133	Total
Imports	3,2	1,3	13,7	18,3
Exports	0,0	0,2	36,6	36,9
Local Production	0,0	3,5	0,0	3,5
Acquisitions less disposals of valuables	3,2	4,6	-22,9	-15,2

5.13 Exports of goods

The following table shows Cyprus intra-EU and extra-EU exports of goods for 2017.

	€ million
Intra – EU	1.323,2
Extra – EU	1.461,5
Total Exports of goods	2.784,7

The Central Bank of Cyprus compiles the “goods” statistics on the basis of Foreign Trade Statistics (FTS) produced by CYSTAT, in line with the “general trade system”. FTS are adjusted in order to comply with Balance of Payments and International Investment Position Manual 6th edition (BPM6) methodology.

Methodology of International Trade in Goods Statistics (CYSTAT)

The data for 1974 onwards refer only to merchandise imports and exports from ports and airports in the Government controlled areas.

Main Sources

Since the accession of Cyprus to EU in May 2004, major changes were brought into trade statistics data. Trade statistics with EU Member States and trade statistics with non-EU countries are compiled mainly from two separate sources. This was the consequence of the abolition of custom formalities between EU Member States, which had served as the traditional source of trade statistics, and the introduction of a new data collection system, called Intrastat. Customs declarations, the traditional source of almost all trade statistics, were no longer required for most movements of goods within the EU. A new EU wide system for collecting intra-EU trade statistics, Intrastat, was introduced in May 2004 for the compilation of statistics with Member States.

The introduction of Intrastat as from May 2004 involved a methodological break with the past. Intra-EU trade statistics are compiled using the information extracted mainly from two sources: The first is the Intrastat system in which the providers of statistical information submit detailed monthly returns giving information on arrivals and/or dispatches with EU countries to national responsible Authority. The Legal background of Intra-EU trade statistics is the 2004 National Intrastat Law (N38(I)/2004) relating to the statistics of the trading of goods between Member States, the 2004 National Law (Amended) (L135(I)/2004) as well as the relevant Community legislation and covers about 96% of Cyprus trade with EU. The second main component of the Intra-EU trade statistics is the VAT return, on which all traders are required to record the total value of goods imported from and exported to other EU Member States. The information provided on the VAT returns is necessary for determining the total EU trade for those traders below the Intrastat thresholds, for maintaining the Intrastat trader's register and for identifying those traders exceeding the thresholds, who are eligible to make the detailed Intrastat return. VAT returns are used for the estimation of transaction below threshold and it very unlikely for a non-resident company to be engaged in trade with values below threshold.

The statistics of trade with non-EU countries are compiled mainly from the Customs Authority computerized system for imports ("Theseas" system) and the Customs computerized system for exports.

Other administrative sources of information are utilized in the compilation process of International Trade in goods statistics such as data from Custom Authority for Intra – EU trade, from the Deputy Ministry of Shipping (former Merchant Shipping Department) for registrations and deletions of ships, Civil Aviation Department for registrations and deletions of aircrafts and international databank for ships.

Responsibility for data collection, compilation and publication

The Tax Department is responsible for collection of Intra –EU trade data via the Intrastat system and maintenance of the Intrastat register. From 1st of July 2012, Intrastat returns are submitted by traders only in electronic format (web declarations).

CYSTAT is responsible for quality controls (e.g. validity and credibility checks), estimations for all traders who have not been included (Intrastat non-responders and traders below the Intrastat exception thresholds), compilation and dissemination of Intra – EU trade statistics.

For extra-EU trade, the majority of data is collected by the Customs Authorities through "Theseas" computerized system for imports and the customs exports computerized system. The Statistical Service performs quality checks, compilation and dissemination of Extra-EU trade statistics.

Recording system (by Foreign Trade Statistics section)

▪ ***Extra- EU trade***

The general trade system is recorded for the trade with non-EU countries. Under it, the recorded aggregates include all goods entering or leaving the economic territory of Cyprus with the exception of simple transit trade. In particular, all goods which are received into customs warehouses are recorded as imports at that stage whether or not they subsequently go into free circulation in Cyprus. Similarly, outgoing goods from customs warehouses are included in the general trade aggregates at the time they leave Cyprus. Furthermore, all goods that go or leave directly into/from local market are included. Goods imported or exported for temporary use (less than 2 years), without change of legal ownership are excluded from extra-EU trade statistics (with the exception of processing trade).

Some goods movements are included in statistics based on specific conditions i.e. aircraft and ships whose economic ownership has been transferred from a natural or legal person established in a third country to a natural or legal person established in Cyprus are included in imports statistics.

▪ ***Intra- EU trade***

The Intra – EU trade is based on the concept of movement of goods between Member States. Accordingly, it is applied to the goods which move from one Member State to another. As such, intra-EU trade statistics record the arrivals and dispatches of all movable property recorded by each Member State. "Arrivals" are analogous to imports; "dispatches" are analogous to exports. Intra – Eu trade statistics are closer to general trade system in terms of coverage.

Arrivals include:

- a) Goods in free circulation which enter the statistical territory of Cyprus.
- b) Goods which have been placed under the Customs procedure for inward processing or processing under customs control (for processing, transformation or repair) in another Member State and which enter the statistical territory of Cyprus.
- c) Some goods movements are included in statistics based on specific conditions e.g. aircraft and ships whose economic ownership has been transferred from a person established in another Member State to a person established in Cyprus are included in the statistics of arrivals.

Dispatches include:

- a) Goods in free circulation which leave the statistical territory of Cyprus bound for another Member State.
- b) Goods which have been placed under the Customs procedure for inward processing or processing under Customs control (for processing, transformation or repair) in Cyprus and which are destined for another Member State.
- c) Some goods movements are included in statistics based on specific conditions e.g. aircraft and ships whose economic ownership has been transferred from a person established in Cyprus to a person established in another Member State are included in the statistics on dispatches.

Statistics do not cover goods in transit that is goods that are merely passing across a Member State, by any means of transport, but are not stored there for any but transport reasons.

Goods imported or exported for temporary use (less than 2 years), while the dispatch/arrival has not to be declared as a supply/acquisition for VAT purposes are excluded from intra-EU trade statistics (with the exception of processing trade).

Exclusions

The implementing Regulations covering the compilation of intra-EU and extra-EU trade statistics contain explicit exclusions lists, which are very similar to each other.

The lists of excluded categories in the regulations are not precisely identical but have most features in common. In particular, the exclusion list for extra-EU trade does not include temporary goods under customs procedure of temporary importation or exportation being explicitly excluded from the coverage of commerce.

Exceptions to Intra EU Trade (Regulation No.91/2010, Annex I)

List of goods excluded from statistics relating to the trading of goods between Member States:

- (a) Monetary gold;
- (b) Means of payment which are legal tender and securities, including means which are payments for services such as postages, taxes, user fees;
- (c) Goods for or following temporary use (e.g. hire, loan, operational leasing), provided all the following conditions are met:
 - no processing is or was planned or carried out,

- the expected duration of the temporary use was or is not intended to be longer than 24 months,
- the dispatch/arrival has not to be declared as a supply/acquisition for VAT purposes;

(d) Goods moving between:

- a Member State and its territorial enclaves in other Member States, and
- the host Member State and territorial enclaves of other Member States or international organisations.

Territorial enclaves include embassies and national armed forces stationed outside the territory of the mother country;

(e) Goods used as carriers of customised information, including software;

(f) Software downloaded from the Internet;

(g) Goods supplied free of charge which are themselves not the subject of a commercial transaction, provided that the movement is with the sole intention of preparing or supporting an intended subsequent trade transaction by demonstrating the characteristics of goods or services such as:

- advertising material,
- commercial samples;

(h) Goods for and after repair and replacement parts that are incorporated in the framework of the repair and replaced defective parts;

(i) Means of transport travelling in the course of their work, including spacecraft launchers at the time of launching.'

Exceptions to Extra EU Trade (Regulation No. 113/2010, Annex I)

List of goods excluded from statistics relating to the trading of goods with non-member countries:

(a) Monetary gold;

(b) Means of payment which are legal tender and securities, including means which are payments for services such as postages, taxes, user fees;

(c) Goods for or following temporary use (e.g. hire, loan, operational leasing), provided all the following conditions are met:

- no processing is or was planned or carried out,
- the expected duration of the temporary use was or is not intended to be longer than 24 months,
- no change of ownership took place or is intended to take place;

(d) Goods moving between:

- the Member State and its territorial enclaves in non-member countries, and
- the host Member State and territorial enclaves of non-member countries or international organisations.

Territorial enclaves include embassies and national armed forces stationed outside the territory of the mother country;

(e) Goods used as carriers of customised information including software;

(f) Software downloaded from the Internet;

(g) goods supplied free of charge which are themselves not the subject of a commercial transaction, provided that their movement is with the sole intention of preparing or supporting an intended subsequent trade transaction by demonstrating the characteristics of goods or services such as:

- advertising material,
- commercial samples;

(h) Goods for and after repair and replacement parts that are incorporated in the framework of the repair and the replaced defective parts;

(i) Means of transport travelling in the course of their work, including spacecraft launchers at the time of launching;

(j) Goods declared orally to Customs authorities which are either of a commercial nature provided that their value does not exceed the statistical threshold of 1 000 EUR or 1 000 kilograms or of a non-commercial nature;

- (k) Goods released for free circulation after being subject to the customs procedures of inward processing or processing under customs control.

Thresholds

- ***Extra-EU trade threshold***

Through the application of the threshold system, extra-EU trade statistics do not cover imports and exports whose value is lower than the customs threshold.

- ***Intra-EU trade threshold***

Through the application of the threshold system, intra-EU trade statistics cover any taxable person whose value of trade is considered to be above the threshold level of €100.000 for arrivals and €55.000 for dispatches for the year 2017.

The value of trade of the parties responsible for providing information is considered to be above the thresholds when the value of trade with other EU Member States during the previous year exceeds the applicable threshold, or when the cumulative value of trade with other EU Member States since the beginning of the year of application exceeds the applicable thresholds, separately for each trade flow.

Intrastat estimation

The figures include value and volume estimates for traders above the Intrastat thresholds who did not make Intrastat returns and for the trade below the exemption threshold. Estimates are assigned to partner country and commodity at detailed level.

Country Classification

The classification of countries is the country nomenclature (Geonomenclature) as set out annually in the Official Journal of the European Communities. From January 1999, the United Nations' ISO alpha-2 coding system is followed, in which each country is identified by a two-letter code.

Partner Country

Exports and **dispatches** are classified by the country (or Member State) of final destination of the goods. The last country to which the goods are specifically directed on their outward movement from the reporting country is regarded as their final destination. This is not necessarily the country in which the good will be unshipped or that in which they will be finally consumed.

For **imports** (extra-EU trade), the trading partner is the country of origin. In general, goods obtained entirely from a given country originate in that country. A product, in the production of which two or more countries were concerned, is considered as originating in the country in which the last transformation or substantial processing took place. Packing, repacking and sorting are not regarded as manufacturing processes.

For **arrivals** (intra-EU trade), the trading partner is the Member State of consignment of the goods. This is the Member State from which the goods were dispatched without halt or legal formality in another country apart from any transport reasons. Conversely, if there was such an operation in another country, that country becomes the Member State of consignment.

Commodity Classification

The commodity classification is based on the Harmonised Commodity Description and Coding System or more simply the Harmonised System or H.S. and includes more than 9000 eight-digit codes.

The Harmonised System is a legal instrument and was adopted by the Customs Co-operation Council (now the World Customs Organisation) in June 1983 and the International Convention on the Harmonised System (H.S. Convention) entered into force on the 1st January 1988.

According to the H.S. Convention, the H.S. means the Nomenclature comprising the headings and the subheadings and their related numerical codes, the Section, Chapter and Subheadings notes and the General Rules for the interpretation of the Harmonised System.

The most detailed results are broken down by the sub-headings of the Combined Nomenclature (C.N.). Both H.S. and C.N. are therefore concerned heavily with the nature or material of the product.

The shape of the H.S. and the C.N. classifications is illustrated in the following table:

Nomenclature	Levels of breakdown	Code	Number
Harmonised System (H.S.)	Section	One digit	21
	Chapter	Two digits	99
	Heading	Four digits	1227
	Sub-Heading	Six digits	5396
Combined Nomenclature (C.N.)	Sub-Heading	Eight digits	9537

Domestic and foreign goods

Domestic goods are goods originating in the economic territory of Cyprus; if they have been wholly obtained or were substantially transformed by processing in Cyprus, so that the processing confers domestic origin. Goods originally imported and having undergone only repair or minor operations which leave them essentially unchanged are not defined as domestic.

Foreign goods are goods originating in the rest of the world, i.e. not produced in the economic territory of Cyprus and compensating goods obtained under the outward processing procedure when such processing confers foreign origin.

Statistical Value

The statistical value is the value calculated at national frontiers. It is calculated on a f.o.b. basis (free on board), for exports/dispatches or c.i.f. basis (cost, insurance, freight), for imports/arrivals.

Therefore, it includes only incidental expenses (freight, insurance) incurred in the part of the journey located on the territory of Cyprus from which the goods are exported (in the case of exports/dispatches) and in the part of the journey located outside the territory of Cyprus (in the case of imports/arrivals).

The statistical value is generally based on the customs value in the case of extra-EU trade, or on taxable value in the case of intra-EU trade. Under the Intrastat system, the statistical value is not provided by all the information providers. For those traders not liable to submit statistical value, the statistical value is calculated by the Statistical Service of Cyprus from the taxable/invoiced amount given in the return by the application of the adjustment coefficients.

In the case the goods imported or exported for processing, it is always the total value of the goods which is given, before and after processing, not just the value added by the processing procedure.

Imports for Home Consumption

In addition to total imports according to general trade system, FTS provide NA and BOP the figures for Imports for Home Consumption which includes imports of goods which are destined for the local market. The breakdown of Imports for Home Consumption into the broad economic destination categories is very important, given the restricted range of products produced in the economic territory of Cyprus and the extensive volume of imported goods. The aforementioned data analysis provides insight into the structure of demand in the country and is being used as a guideline in the

calculation of Private Household Consumption and Gross Fixed Capital Formation by detailed product breakdown.

Table 5.13.1: Imports for Home Consumption by economic destination, 2017, EUR 000`s

		EUR 000`s
	Consumer Goods	1.951.764
ECDES	Food and Beverages (Consumer Goods)	797.816
ECDES	Other Consumer Goods (including tobacco)	523.137
ECDES	Semi-Durable Consumer Goods	357.307
ECDES	Durable Consumer Goods	273.504
	Intermediate Inputs	1.430.837
ECDES	Agriculture Products, used as Intermediate Inputs	104.570
ECDES	Construction & Mining Products used as Intermediate Inputs	252.705
ECDES	Manufacturing Products used as Intermediate Inputs	872.652
ECDES	Transport, Storage and Communication Products used as	42.423
ECDES	Other	158.487
	Capital Goods	376.857
ECDES	Agriculture Capital Goods	13.378
ECDES	Construction & Mining Capital Goods	37.582
ECDES	Manufacturing Capital Goods	74.447
ECDES	Transport, Storage & Communication Capital Goods	64.427
ECDES	Other Capital Goods	187.023
	Transport Equipment	2.614.228
ECDES	Passenger Motor Vehicles	434.702
ECDES	Motor Vehicles for transport of goods	37.755
ECDES	Ships, boats and floating structures	1.775.581
ECDES	Public-Service Type Passenger Motor Vehicles	3.949
ECDES	Aircraft, Helicopters, Balloons and Airships	186.584
ECDES	Motorcycles & Bicycles	5.638
ECDES	Other Transport Equipment	13.121
ECDES	Parts for Transport Equipment	156.897
	Fuels and Lubricants	875.207
ECDES	Fuels & Lubricants	875.207
	Unclassified	57.041
ECDES	Unclassified	57.041
	Total	7.305.934

Adjustments made for BoP and NA purposes on FTS in order to comply with BPM6 methodology are:

- Goods for processing, quasi-transit trade and cases where all the parties involved are non-residents are excluded from BoP data. BoP compilers receive adjusted FTS data (i.e. excluding the aforementioned cases). FTS section provides monthly data to BoP compilers on both imports and exports of goods under processing broken down by nature of transaction. Given the nature of transaction, the net amount of processing is calculated and is recorded in the services account. The CBC also collects processing via its Quarterly Services Survey in order to

supplement the data reported in FTS. In order to avoid double counting, data is cross-checked with FTS statistics on a company level.

- Quasi-transit trade is only included, when identified, in the community concept followed in BoP and it has no impact in net terms as an adjustment in the price is made in order to adjust the gap between the value declared when the goods are initially imported and their value when dispatched. However, quasi-transit trade transactions are not included in official BoP as well as in NA data. Similarly, transit trade is excluded from both BoP and NA data.
- Goods acquired/sold by residents abroad are included in BoP data.
- Merchanting is included under “Goods” in BoP and NA. This data is collected directly from the enterprises involved in merchanting. Goods acquired under merchanting are recorded as negative credit in the BoP in the period the merchant acquires the goods and when they are sold they are recorded in that period as goods sold under merchanting as a positive credit. Merchanting entries are valued at transaction prices.
- In the case of imports, adjustments are made for BoP valuation for freight and insurance. In the case of EU-partners freight and insurance coefficients are calculated based on information extracted from intrust declarations on a quarterly basis. Particularly, for 2017 the relevant coefficients are shown below:

Partner country	2017			
	Q1	Q2	Q3	Q4
AT	5,15	5,95	3,86	4,35
BE	4,57	4,27	4,58	4,07
BG	7,22	5,49	5,91	6,57
CZ	3,61	2,71	2,36	3,03
DE	3,87	4,42	4,22	3,55
DK	10,66	11,11	11,63	10,84
EE	.	23,97	.	5,79
ES	4,74	3,79	3,77	2,81
FI	3,78	8,92	8,7	13,76
FR	3,78	5,31	3,54	4,6
GB	6,06	7,42	6,48	5,63
GR	3,51	3,53	3,42	3,28
HR	.	10,36	17,42	10,71
HU	5,31	6,56	8,08	6,89
IE	4,63	3,28	3,88	4,24
IT	5,95	5,46	5,66	4,58
LT	1,46	3,38	6,94	3,99
LU	3,23	4,42	2,79	2,23
LV	11,87	28,74	28,07	14,9
MT	.	3,2	3,63	6,38
NL	5,78	6,08	7,01	5,73
PL	7,77	6,43	6,67	7,24
PT	3,58	3,6	2,98	5,4
RO	8,89	10,37	11,75	11,65
SE	7,34	5,43	3,79	6,17
SI	7,22	7,02	6,05	12,82
SK	6,96	6,96	10,87	8,99
Total – EU	4,36			

Of which insurance coefficients:

Partner country	2017			
	Q1	Q2	Q3	Q4
AT	3,99	2,18	1,04	3,44
BE	1,59	1,94	1,41	1,26
BG	1,21	1,86	1,69	1,36
CZ	0,79	0,29	0,23	0,25
DE	1,47	0,28	0,69	0,96
DK	1,43	1,64	1,91	1,01
EE	0,34	.	0,3	0,26
ES	0,9	0,96	0,69	1,01
FI	0,93	1,81	1,25	4,36
FR	0,4	0,25	0,45	0,69
GB	1,55	1,25	1,33	1,01
GR	0,85	0,92	0,74	1,07
HR	0,29	0,29	0,9	0,29
HU	0,56	5,65	0,36	14,89
IE	2,34	1,32	0,84	0,77
IT	1,45	1,9	1,5	0,42
LT	0,5	1,18	1,89	0,21
LU
LV	2,45	2,53	1,27	1,03
MT	.	1,22	.	.
NL	2,36	2,46	2,49	1,85
PL	2,48	1,21	1,12	1,58
PT	1,22	1,98	3,61	3,27
RO	0,55	0,42	2,21	1,33
SE	3,93	4,59	2,12	2,1
SI	3,21	1,93	1,68	2,46
SK	1,47	0,77	0,63	1,53
Total – EU	1,08			

- For 5 non-EU countries (EG, LB, IL, SY, TR), Greece's ratios are used based on an ad-hoc phone survey performed amongst the most important merchants.
- For the rest of the countries the 10% rule is applied for the c.i.f./f.o.b. adjustment.

- When the abovementioned coefficients are not available for a specific quarter the EU average is used instead.
- No c.i.f./f.o.b. adjustment is made in the case of moveable equipment (i.e. ships, vessels, aircrafts).
- Illegal activities related to goods (see Chapter 7).
- Valuable goods acquired by travellers (e.g. jewellery) are excluded from travel and recorded under goods in both BoP and NA.
- Goods procured in foreign ports and airports by carriers not already included in FTS (refers to fuels and lubricants acquired by ship-owning and airways companies abroad).

Goods through internet not included in FTS. Transactions performed through internet broken down by merchant category (for both commercial and individual cards) are collected on a quarterly basis directly from the leading clearing organization in Cyprus. Based on the merchant category, transactions are distinguished between “Travel”, “Goods (adjusted for travel item)” and “Other Services”. Categories considered as goods that are below the FTS exception threshold are incorporated in BoP and NA.

Table 5.13.2: Reconciliation Table: explaining differences between Trade in goods and BoP data, 2017 (€ million)

	Exports	Imports
FTS as per CYSTAT	2.492,7	7.720,8
Conceptual adjustments		
CIF/FOB Adjustment	0,0	-365,7
Goods procured in ports by carriers not already included in FTS (refers to fuels and lubricants acquired by ship-owning and airways companies in foreign ports and airports)	0,0	105,8
Consistency with other accounts (NAs or business statistics) - Illegal Activities (Imports of narcotics)	0,0	43,5
Military Imports not in FTS	0,0	86,6
Valuable Goods acquired by travellers	0,0	5,2
Merchanting	291,9	0,0
Goods through internet not in FTS	0,0	144,5
Goods acquired abroad and remained abroad (not in FTS)	0,1	0,0
Goods – BoP – National Accounts	2.784,7	7.740,5

- Goods are recorded at the time they cross the border or at the time of the change of ownership, in case there is no physical movement of the goods. Goods in transit are excluded.
- Certain steps to identify and exclude goods fall under cases listed in ESA 2010 §3.166. Please refer to the reconciliation table above.
- Nationally compiled foreign trade data for the country is compared with those from EU-trade partners. Cyprus, also participates in Eurostat’s Annual comparison exercise between EU-countries.

In the supply and use framework, all necessary balancing adjustments for NA purposes are made. In practice no balancing adjustments are made on exports and imports of goods in SUT framework. In some cases, minor reclassification of products (CPA’s) might take place without changing the total value of imports/exports of goods.

5.14 Exports of services

The following table shows Cyprus intra-EU and extra-EU exports of services for 2017.

	€ million
Intra – EU	5.923,1
Extra – EU	6.261,5
Total Exports of services	12.184,6

For the compilation of international trade in services, a mixed collection system is in place. The main surveys conducted by the Central Bank of Cyprus (CBC) are listed below:

- Quarterly “Services” survey, which is addressed to resident legal entities engaged in trade in services with other countries as well as trade in specific goods (not covered by FTS, e.g. merchanting). Receipts and payments reported under this survey are broken-down by category and by country of the counterparty.
- Quarterly “Profit and Loss” survey, which is addressed to all resident MFIs. Under this survey, MFIs report their cross-border transactions in services (as well as interest on loans and deposits), without any threshold.
- Quarterly “Insurance” survey, which is addressed to resident legal entities which provide and/or procure non-life insurance/reinsurance services and/or life assurance/reinsurance services or insurance brokerage services. The survey covers all data included in the technical account for life

and non-life insurance business, data included in the income and expenditure statement of insurance brokers and data regarding investment activities of insurance companies.

- Quarterly “Money Transfers” survey, which is addressed to all resident companies/businesses, is involved with the provision of money transfer services. Data collected through this survey includes transfers made on behalf of clients or for the entity’s own account by country breakdown of the counterparty and the reason for the transfer.
- Semi-annual “Ship-management” survey, which is addressed to resident companies providing ship-management services to ship-owning companies that are registered both in Cyprus and abroad. Data collected through the survey includes the income from services rendered by the resident reporting entity to ships owned by non-residents of Cyprus and the management fees received from resident foreign owned ship-owning companies whose ships are managed by residents and expenses incurred by resident ship management entities both in Cyprus and abroad.
- Annual “Ship-owning” survey, which is addressed to resident ship-owning companies. The survey collects data regarding their financial claims/liabilities against/towards non-resident related entities, the acquisition/financing/management and chartering of their ships, the value and the technical characteristics of their ships and their revenue/expenses both in Cyprus and abroad. The survey covers the most important ship-owning entities and for the remaining ones figures are grossed-up based on the type of ship, age and tonnage in order to estimate the data for the whole population.
- Annual “Education” survey, addressed to all resident colleges / universities with non-resident students. Information is mainly used for the compilation of educational travel item (exports) as well as for the recording of services acquired from resident colleges/universities from non-residents.

Apart from the surveys, another important source of information for the compilation of services in the BoP is companies financial statements. As far as the services vis-à-vis EU institutions are concerned, mirror data from Commission’s/Eurostat’s database is used.

Transport services

Data on shipping are compiled using the information submitted through the semi-annual ship management survey and the annual ship-owning survey conducted by the Central Bank of Cyprus, and the data/information extracted by the Cystat from the “IHS Fairplay” database. The latter source

enables the identification of the economic owner of each ship and the collection of information relevant for the grossing up procedure. The Deputy Ministry of Shipping (former Department of Merchant Shipping) provides information on the registration/deregistration of ships in Cyprus.

The overwhelming majority of ship economic owners (resident in Cyprus) lease out the ships on a “time” or “spot” leasing contract. National Accounts estimate the output (leasing fees) of the ship-owning activity using the stratification method (for more details see chapter 3.5). The whole amount of the Output is also recorded in the exports of services (transportation).

Credit cards data are used for the passenger transport payments and FTS compiled by Cystat for freight services. Particularly, in order to convert imports c.i.f. to imports f.o.b, the CBC uses freight and insurance coefficients being calculated from intrastat declarations on a quarterly basis. Moreover, in the case of freight adjustment, 2/3 is allocated to sea freight whereas 1/3 to air freight subcategories. For more information on this as well as the relevant coefficients used in 2017, please refer to section 5.13.

Data for all other sub-categories of the transportation services are obtained through the quarterly “Services” survey.

Travel services

The main sources of information for the compilation of “Travel services” are the following:

- Surveys conducted by Cystat:
 - The “Incoming traveller” survey (estimation on number of resident travellers abroad, for the different categories of travel services)
 - The “Outgoing travellers” survey for estimating the tourist's expenditures and the number of days they spent in Cyprus
 - The annual survey on the spending of Cypriots abroad and in Cyprus. The relevant quarterly data for the spending abroad are derived from the monthly number of Cypriots’ departures by purpose of travel (incoming traveller survey) and their spending abroad (credit cards information). The Cypriots’ length of stay abroad is also collected through the annual survey upon their arrival.
- The annual survey on colleges/universities in Cyprus conducted by the Central Bank of Cyprus. For educational travel payments estimates are made based on the total number of students per

country and average cost of studies. Mirror data are also taken into account with the two main partners in this subcategory, namely Greece and the United Kingdom.

- Estimates for imputed rent are also taken into account when compiling the travel item.

Travel data compiled by BoP is broken down by purpose of travel (i.e. business, health, educational and other personal). NA use this information for the estimation of the expenditure of residents abroad and non-residents in CY.

Specifically, for residents abroad, NA deduct from the total amount under BoP item “travel” (credit side) the expenditure for business purposes since this represents IC of resident units. However, the latter is not used in the NA estimates since IC is obtained from the economic surveys which include the expenditure for business purposes abroad.

Furthermore, regarding the expenditure of non-residents in Cyprus, the whole amount from the BoP item “travel” (debit side) is used.

Financial services

Data for “financial services” are derived from the quarterly “Services” survey, the quarterly “Profit and Loss” survey, information on the income of financial SPEs and the FISIM data which are calculated by Cystat.

Income of financial SPEs is estimated based on the turnover indicator of “professional business” sector. In practice, financial SPEs pay fees to local lawyers, auditors and consultants (for services acquired by them) and they usually charge a fee to their parent companies. It is possible that SPEs do not necessarily charge a fee. However, in this case a fee equal to cost is imputed. Given this treatment and the fact that their output should by definition be the sum of costs, their revenue to be reported in the financial services are estimated indirectly based on the turnover of resident service providers.

Telecommunication, computer and information services

The main source of information for this type of services is again the quarterly “Services” survey, complemented by credit cards data (for the payments side). The quarterly services survey is addressed to resident companies engaged in trading of services with non-residents. Concerning credit cards data, BoP compilers used to collect this data as part of the ITRS reporting which was abolished in January 2016. ITRS data and credit cards data were used in parallel with direct reporting

for checking purposes and for capturing information on natural persons. It is noted that the value of these additional transactions (physical persons) is negligible.

Government goods and services n.i.e.

The main source of information for this type of services is the banking system and data from UK bases. For the import side, the source is the Central Bank of Cyprus itself, since it acts as the banker to the government.

Data for all other types of services are mainly derived from the quarterly “Services” survey. Moreover, illegal activities and e-gambling have also been incorporated, after the adoption of relevant estimates made by Cystat.

Concerning transactions of natural persons, the CBC enhanced the HFCS survey run by the Economic Research Department of the CBC in order to cover the loss of information after the abolition of the ITRS in 2016.

The following table presents the exports of services broken down by the main BoP categories.

Table 5.14.1: Exports of services by main BoP categories (€ million)

Services	12.184,6
Manufacturing services on physical inputs owned by others	67,8
Maintenance and repair services not included elsewhere (n.i.e.)	57,7
Transport	3.030,6
Travel	2.860,1
Construction	13,8
Insurance and pension services	100,9
Financial services	3.456,6
Charges for the use of intellectual property n.i.e.	164,9
Telecommunications, computer, and information services	1.989,7
Other business services	239,0
Personal, cultural and recreational services	44,2
Government goods and services n.i.e.	159,1
Services not allocated	0,0

For rendered export of services reporting agents are instructed to record services at the time they are rendered, i.e. on an accrual basis.

Regarding the fees charged for the processing service data is either collected directly from reporting entities or is netted based on information collected via the FTS. More specifically, FTS division

provides monthly data to BoP compilers on both imports and exports of goods under processing broken down by nature of transaction. Given the nature of transaction, the net amount of processing is calculated and is recorded in the services account. The CBC also collects processing via its quarterly “Services” survey in order to supplement the data reported in FTS. In order to avoid double counting, data is cross-checked with FTS statistics on a company level.

The same arrangement is also followed in the case the fee for repairs. FTS division provides monthly data to BoP compilers on both imports and exports and the net amount of repairs is calculated and is recorded in the services account. The CBC also collects the said category via its surveys (mainly Services and Ship-owning surveys) in order to supplement the data reported in FTS. In order to avoid double counting, data is cross-checked with FTS statistics on a company level.

Reporting entities are instructed to report construction services according with the one-year rule.

Data on insurance and pension services are collected from the quarterly survey directly to domestic insurance companies.

Exports of FISIM from resident financial institutions to non-resident financial institutions are not recorded.

Information relating to supply of cross-border services provided under the Mini One-Stop-Shop (MOSS) Scheme are not considered for estimating exports and imports of the relevant services (telecommunications, broadcasting and electronic services). However, data on internet transactions (performed using cards issued by domestic banks) has been taken into consideration when compiling the aforementioned categories. Particularly, transactions performed through internet broken down by merchant category (for both commercial and individual cards) are collected on a quarterly basis directly from the leading clearing organization in Cyprus. Based on the merchant category, transactions are distinguished between “Travel”, “Goods” and “Services”. Categories considered as services are incorporated in both BoP and NA.

5.15 Imports of goods

The following table shows Cyprus intra-EU and extra-EU imports of goods for 2017 (for the compilation procedures please refer to section 5.13.2).

	€ million
Intra – EU	4.737,0
Extra – EU	3.003,5
Total Imports of goods	7.740,5

- Goods are recorded at the time they cross the border or at the time of the change of ownership, in case there is no physical movement of the goods.
- Goods in transit are excluded.

The following steps are taken to ensure the correct scope of imports of goods:

- Deliveries between affiliated enterprises are included in FTS but no adjustment concerning the pricing is made, since at the moment such transactions cannot be identified. It should be noted that in Cyprus there are no large group enterprises engaged in trade of goods.
- For cases without goods crossing the country's frontier as listed in ESA 2010, §3.164 please refer to reconciliation table above.
- Goods sent abroad for processing are identified from FTS and are excluded from goods.
- All transactions listed in ESA 2010 §3.165 are included in FTS.
- Certain steps to identify and exclude goods fall under cases listed in ESA 2010 §3.166. Please refer to the reconciliation table above.

Nationally compiled foreign trade data for the country is compared with those from EU-trade partners. Cyprus, also participates in Eurostat's Annual comparison exercise between EU-countries. Furthermore, in the supply and use framework, all necessary balancing adjustments for NA purposes are made.

5.16 Imports of services

For the compilation of BoP data on both intra-EU and extra-EU imports of services, please refer to section 5.14 since sources and methods are the same for both exports and imports of services.

Data on computer services and royalties and license fees in the BoP are carefully examined to identify any payments related to software. Such data is collected directly from reporting entities.

The following table shows Cyprus intra-EU and extra-EU imports of services for 2017.

	€ million
Intra – EU	3.657,2
Extra – EU	3.669,4
Total Imports of services	7.326,6

The following table presents the imports of services broken down by the main BoP categories.

Table 5.16.1: Import of services broken down by main BoP categories (€ million)

Services	7.326,6
Manufacturing services on physical inputs owned by others	145,7
Maintenance and repair services not included elsewhere (n.i.e.)	18,5
Transport	1.765,0
Travel	1.213,5
Construction	7,5
Insurance and pension services*	174,0
Financial services	1.761,6
Charges for the use of intellectual property n.i.e.	205,5
Telecommunications, computer, and information services	1.182,1
Other business services	679,6
Personal, cultural and recreational services	116,9
Government goods and services n.i.e.	56,5
Services not allocated	0,0

** More details are provided in chapter 3.17.2 regarding allocation of insurance output*

CHAPTER 6: THE BALANCING OR INTEGRATION PROCEDURE, AND VALIDATION OF THE ESTIMATES

6.0 Introduction

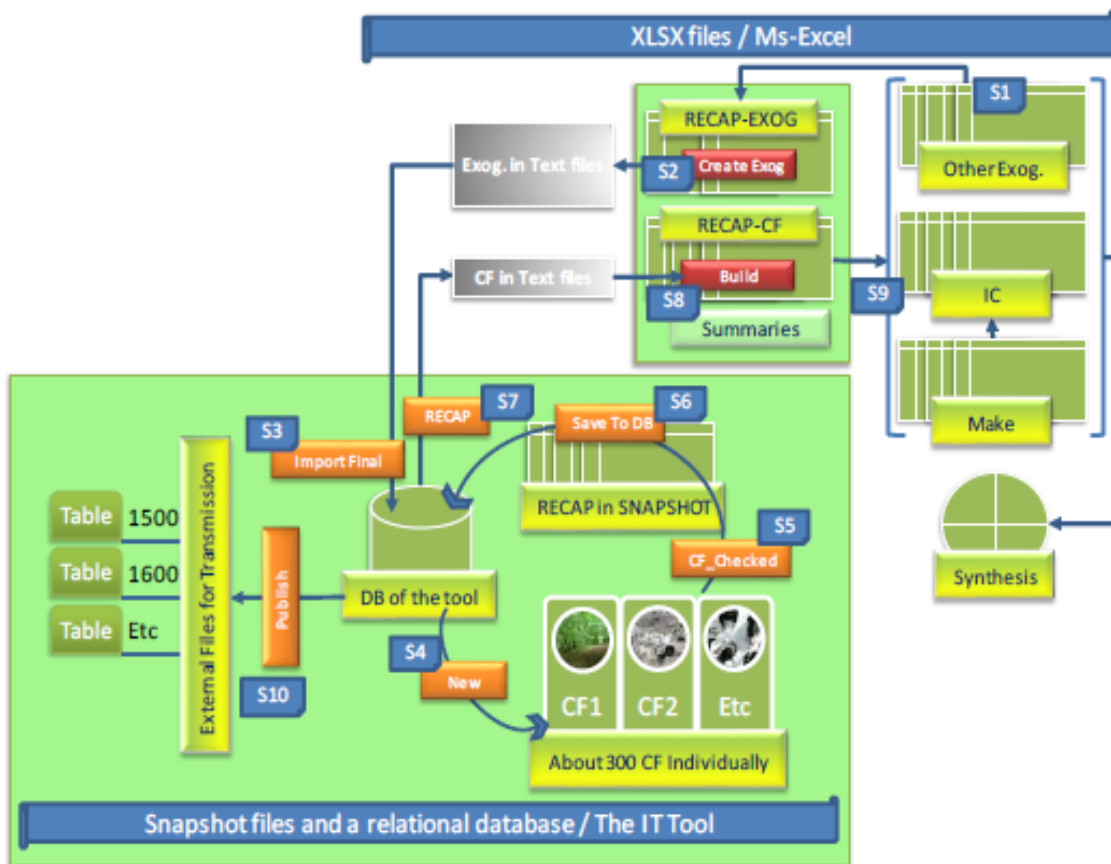
Supply and Use Tables (SUT) are an important part of the system of National Accounts in Cyprus, since they accommodate a vast amount of information regarding the flows of goods and services in the economy while providing an overview of the latter and all-important economic components at product level. SUT system framework became a primary tool for the integration, validation and verification of the production and expenditure approaches at product level.

Currently, the main purpose of this work is to finalize GDP for the reference year T-3 and make any necessary backward revisions. Furthermore, SUT framework is used to produce preliminary balanced (at detailed level) estimate of the level of GDP for the year T-2. As a result, for GNI Questionnaire purposes only T-1 estimates are balanced at macro level outside SUT framework. The medium-term goal is to fully incorporate SUT framework in the annual process of GDP estimates for the reference year T-2.

The contribution of SUT in the system of National Accounts lies in the close link that they provide with source statistics and the documentation of all components of GDP by detailed product level at market prices. Any difference in GDP level by the production and by the expenditure approach is eliminated in the process of finalization of estimates. Income approach is processed as a residual item in Cyprus National Accounts.

In the context of Eurostat's Grant agreements, an IT system model for balancing has been developed by external specialists and in close collaboration with National Accounts expertise from France where a similar SUT system model is used. This IT system, called SUT-Equalizer, has been recently upgraded in order to incorporate new functionalities and tools to help users make quick and better decisions during balancing procedure and also to store the data to a more advance database environment (SQL) than before (Ms Access). Until now, SUT-Equalizer has been used for balancing the data at product level, for years 2010 to 2018. Supply and Use & Input-Output tables (SUIOT) are available for these years incorporating European System of Accounts (ESA2010) principles. The framework, in which SUIOT are produced, is presented in the figure below. Reference to the sources and workings regarding each item is made later in the text.

Figure 1: SUT framework



Generally, the data for processing resides on excel files called as “exogenous data” and feeds a master excel file which holds all the exogenous data (step “S1”, as marked in the figure 1 above). The data in master exogenous file is then extracted to a database text file (step “S2”, figure 1) from which SQL database is updated appropriately (step “S3”, figure 1). The newly upgraded IT tool interface for balancing retrieves the information from SQL database and presents the detailed data of Supply and Use at 3-digit product level (step “S4”, figure 1). This is the place where, the users can balance the supply and use sides of each product (see figure 2 below).

When the supply and use sides are balanced for every product, the datasets are checked (step “S5”, figure 1), saved to SQL database (step “S6”, figure 1) and then extracted to text files (step “S7”, figure 1). These text files are then uploaded, through an automated process, to a master excel file called as “recap” (step “S8”, figure 1), which presents a data summary by product and components of the Supply and Use sides. Finally, the various exogenous data files are updated from the “recap” excel file (step “S9”, figure 1) in order to present the proposed data changes for checking; phase of reject/accept proposals called as “recap procedure”.

For each balancing cycle, SUT-Equalizer through SQL database stores historical data and any proposed data changes along with relevant comments of justification. At the end of the balancing cycle, through the exogenous data, the appropriate feedback and revised data is submitted by the coordinator/supervisor back to the system for further processing and appropriate actions on product level to be taken from the users. This is the completion of balancing cycle and the start of a new one.

Figure 2: SUT-Equalizer balancing interface

The screenshot displays the SUT-Equalizer balancing interface. At the top, there is a menu bar with options like File, Balancing, and Coordinator. Below the menu is a toolbar with icons for various functions such as Open, Save, Convert, Data Explorer, Recap, All users, Switch to Iter..., Comments, Refresh, Windows, Settings, and Quit. The main area shows a spreadsheet with the following columns: A (2017), B (SUT), C (DPJS), D (Label), E (Val2016), F (L VOL), G (Vol2017), H (L PRICE), I (Val2017), J (L VAL), K (VAT rates), L (2016), M (2017), N (REFERENCE INDICES), O (Ivg), P (Gdp), Q (Ipr), R (Gdp), S (Ivg), T (Gdp). The spreadsheet contains data for various categories, including 'Hotel and similar accommodation services', 'Imports of goods CIF', 'Imports of services', 'Trade margins from industry', 'Transport margins', 'Taxes on imports', 'Subsidies on products', 'Non-deductible VAT', and 'Final consumption expenditure'. The bottom status bar shows the file path: \\naapsrv\SUIOT Tool\03-Coord\2017R04 (Revised Initial Data)\03-SNAPS-Checked\551.snapshot.

These balancing cycles continue until all the discrepancies between the supply and use sides for every product are eliminated, after they have been documented and approved by the supervisor. As soon as this is completed, the final Supply and Use & Input-Output tables (SUIOT) are published to external files for transmission to Eurostat (step “S10”, figure 1). Approximately, 3 to 5 balancing cycles are needed in order to complete estimates for a year at current and previous year prices.

6.0.1 GDP components according to Production, Expenditure & Income approach for the year 2017

For the year 2017, the balancing procedure of the Supply and Use sides at product level (CPA) resulted in minor changes at the components of GDP. After the completion of the balancing process for all the products, the Gross Value Added (GVA) of the Total Economy changed by +0,5% and the Gross Domestic Product (GDP) by +0,4% regarding the production approach.

Table 6.0.1: Production Approach before & after balancing, 2017, € million

Variable	ESA2010 Code	Initial Estimate	Balancing Adjustment	Final Estimate
Gross Output	P1	37.595,7	33,9	37.629,6
Intermediate Consumption	P2	20.006,7	-50,3	19.956,3
Gross Value Added	B1G	17.589,0	84,3	17.673,3
Taxes less Subsidies	D21-D31	2.572,0	0,0	2572,0
Gross Domestic Product	B1GQ	20.161,0	84,3	20.245,3

An analysis of the balancing adjustments made by NACE section activity is provided in the next table. It should be noted that, since the balancing procedure is done at product level, it ensures the independency between the total adjustments made to Gross Output and Intermediate Consumption at NACE section activity level. For example, the output of NACE "C" is the sum of the output of all the products produced by this activity. On the other hand, Intermediate Consumption of NACE "C" is the sum of the Intermediate Consumption of all the products consumed by this activity. Therefore, since the adjustments are made at product level during the balancing procedure, the total change (adjustment) of the output for a certain activity is independent from the total change (adjustment) of its Intermediate Consumption.

The following table summarizes the two sets of data, before and after balancing, by NACE section activity.

Table 6.0.2: Gross Value Added by Industry before & after balancing, 2017, € million

2017	Initial Estimates			Balancing Adjustments			Final Estimates		
NACE Rev. 2	Gross Output	Intermediate Consumption	Gross Value Added	Gross Output	Intermediate Consumption	Gross Value Added	Gross Output	Intermediate Consumption	Gross Value Added
A	776,3	404,7	371,5	5,9	1,1	4,8	782,2	405,9	376,3
B	77,3	60,4	16,9	0,0	-0,5	0,5	77,3	59,9	17,4
C	2.950,5	1.968,7	981,8	0,0	-9,0	9,0	2.950,5	1.959,7	990,8
D	657,1	450,5	206,6	0,0	-16,3	16,3	657,1	434,2	222,9
E	314,0	166,2	147,7	0,0	-0,1	0,1	314,0	166,1	147,9
F	2.977,5	2.101,5	876,0	0,0	-45,2	45,2	2.977,5	2.056,3	921,2
G	3.276,7	1.287,8	1.988,9	0,0	-1,1	1,1	3.276,7	1.286,8	1.989,9
H	4.693,8	3.456,3	1.237,5	0,0	-3,1	3,1	4.693,8	3.453,1	1.240,6
I	2.476,8	1.205,5	1.271,3	0,0	1,3	-1,3	2.476,8	1.206,8	1.269,9
J	3.284,6	2.160,6	1.124,0	0,0	-25,1	25,1	3.284,6	2.135,5	1.149,1
K	5.506,9	3.734,4	1.772,6	0,0	-12,4	12,4	5.506,9	3.722,0	1.785,0
L	2.152,5	505,1	1.647,4	0,0	48,1	-48,1	2.152,5	553,2	1.599,3
L68A (Imputed Rentals)	1.314,1	362,9	951,3	0,0	37,6	-37,6	1.314,1	400,5	913,7
M	2.478,6	917,0	1.561,6	0,9	-3,3	4,2	2.479,5	913,7	1.565,8
N	521,3	199,2	322,1	0,0	-5,8	5,8	521,3	193,4	327,9
O	1.988,8	431,6	1.557,2	-0,9	-0,9	0,0	1.987,9	430,7	1.557,2
P	1.318,3	238,9	1.079,4	4,0	5,9	-1,9	1.322,3	244,8	1.077,5
Q	1.081,7	395,6	686,1	24,1	17,3	6,8	1.105,8	412,9	692,9
R	475,4	189,4	286,1	0,0	-2,0	2,0	475,4	187,4	288,0
S	421,6	133,2	288,3	0,0	0,8	-0,8	421,6	134,0	287,6
T	166,1	0,0	166,1	0,0	0,0	0,0	166,1	0,0	166,1
GVA	37.595,7	20.006,7	17.589,0	33,9	-50,3	84,3	37.629,6	19.956,3	17.673,3

Concerning the production approach to calculating GDP, the balancing of products resulted in no significant changes regarding Gross Output except for NACE "Q". Overall, the original data obtained for Gross Output is considered to be adequate and reliable at the aggregate level of 2-digit NACE since detailed product analysis is obtained from annual surveys & censuses. The sum of balancing adjustments at product level resulted to a total adjustment of €33,9 million on Gross Output of the Total Economy for 2017.

On the other hand, the adjustments to Intermediate Consumption at product level resulted to various balancing adjustments for Intermediate Consumption at NACE section level. This is expected, taking into account that prior to the balancing procedure the Intermediate Consumption is estimated at product level. The model estimation for Intermediate Consumption by product is based on the products' price change, the Intermediate Consumption matrix (CPA by NACE) of the final SUT data of the previous year and the growth of Gross Output at NACE section level. The sum of balancing adjustments at product level resulted to a total adjustment of €-50,3 million on Intermediate Consumption of the Total Economy for 2017.

By completing the balancing process for all the products, the Gross Domestic Product (GDP) on the expenditure approach changed by +0,4% as for the production approach, since the adjustments are calculated from the latest data available, balanced at macro level (GDP components).

The table below summarizes the two sets of data, before and after balancing, by main variable of expenditure.

Table 6.0.3: Expenditure Approach before & after balancing, 2017, € million

Variable	ESA2010 Code	Initial Estimate	Balancing Adjustment	Final Estimate
Total Final Consumption Expenditure	P3	16.160,5	-10,4	16.150,1
Household Final Consumption Expenditure	P3	12.952,2	-10,4	12.941,8
NPISH Final Consumption Expenditure	P3	207,4	0,0	207,4
General Government Final Consumption Expenditure	P3	3.000,9	0,0	3.000,9
Gross Capital Formation	P5	4.348,1	-155,1	4.193,0
Gross Fixed Capital Formation	P51G	4.226,8	-2,9	4.223,9
Changes in Inventories	P52	136,5	-152,2	-15,8
Acquisitions less disposals of valuables	P53	-15,2	0,0	-15,2
Exports of Goods and Services	P6	14.969,3	0,0	14.969,3
Imports of Goods and Services	P7	15.067,1	0,0	15.067,1
Gross Domestic Product	B1GQ	20.410,8	-165,5	20.245,3

On the expenditure approach to calculating GDP, the balancing procedure resulted in revision of Changes in Inventories by €97,6 million (0,5% of GDP). In total, Final Consumption of Households changed by €-10,4 million (-0,05% of GDP) and Gross Fixed Capital Formation by €-2,9 million (-0,01% of GDP). However, the balancing procedure resulted in no changes on aggregated level regarding Final Consumption of NPISH, General Government Final Consumption Expenditure and Imports/Exports of Goods & Services since these datasets are considered to be the most reliable ones and only reclassifications within products are expected, except in very rare cases where data errors are identified and are corrected.

As it is already mentioned, income approach is processed as a residual item in Cyprus National Accounts. The adjustments for the components of the income approach are also calculated from the latest data available which is balanced at macro level.

The table below summarizes the two sets of data, before and after balancing, by main variable of income approach.

Table 6.0.4: Balancing Adjustments on Income Approach, 2017 (€ million)

Income Approach, 2017	ESA 2010 Code	Initial Estimate	Balancing Adjustments	Final Estimate
Compensation of employees	D1	8.801,7	0,0	8.801,7
Non-Financial Corporations		4.823,9	0,0	4.823,9
Financial Corporations		995,8	0,0	995,8
General Government		2.363,6	0,0	2.363,6
Households		492,1	0,0	492,1
NPISH		126,2	0,0	126,2
Gross operating surplus	B2G	8.447,8	84,3	8.532,1
Non-Financial Corporations		3.478,5	52,7	3.531,2
Financial Corporations		756,2	12,4	768,6
General Government		553,6	0,0	553,6
Households		3.632,3	19,2	3.651,5
NPISH		27,1	0,0	27,1
Mixed income	B3G	0,0	0,0	0,0
Taxes on production and imports	D2	3.034,0	0,0	3.034,0
Subsidies	D3	122,5	0,0	122,5
Gross Domestic Product	B1GQ	20.161,0	84,3	20.245,3

Since operating surplus is considered to be the residual item of this approach, the balancing adjustments are applied to this item. Balancing procedure resulted in revision of operating surplus by €84,3 million (1% change of its initial estimate).

6.0.2 GDP components according to Production & Expenditure approach for the period 2014-2018

Balancing adjustments are available on both production and expenditure approach. Components like “Imports/Exports of goods”, “Taxes less Subsidies” and “General Government Final Consumption” are the most reliable datasets and therefore adjustments are minimal, as already mentioned, that happen in very rare cases and only after investigation for possible data errors with the data providers/experts. In most of the cases, balancing adjustments are being allocated to components which are the least firmly based items.

Table 6.0.5: Balancing Adjustments on Production Approach for the period 2014-2018, € million

Production Approach		Gross Domestic Product	Gross Output	Intermediate Consumption	Gross Value Added	Taxes less Subsidies
2014	Initial Estimate	17.216,1	30.874,2	15.818,1	15.056,1	2.160,0
	Balancing Adjustment	214,0	92,1	-121,9	214,0	0,0
	Final Estimate	17.430,2	30.966,3	15.696,2	15.270,2	2.160,0
2015	Initial Estimate	17.884,8	32.329,9	16.674,3	15.655,6	2.229,3
	Balancing Adjustment	-0,9	132,7	133,6	-0,9	0,0
	Final Estimate	17.884,0	32.462,6	16.807,9	15.654,7	2.229,3
2016	Initial Estimate	18.927,2	34.439,6	17.879,7	16.559,9	2.367,3
	Balancing Adjustment	2,1	136,4	134,3	2,1	0,0
	Final Estimate	18.929,3	34.576,0	18.014,0	16.562,0	2.367,3
2017	Initial Estimate	20.161,0	37.595,7	20.006,7	17.589,0	2.572,0
	Balancing Adjustment	84,3	33,9	-50,3	84,3	0,0
	Final Estimate	20.245,3	37.629,6	19.956,3	17.673,3	2.572,0
2018	Initial Estimate	21.401,0	40.303,5	21.685,6	18.617,9	2.783,2
	Balancing Adjustment	211,6	37,6	-174,0	211,6	0,0
	Final Estimate	21.612,6	40.341,1	21.511,6	18.829,4	2.783,2

Table 6.0.6: Balancing Adjustments on Expenditure Approach for the period 2014-2018, € million

Expenditure Approach		Gross Domestic Product	Total Final Consumption Expenditure	Household Final Consumption Expenditure	NPISH Final Consumption Expenditure	General Government Final Consumption Expenditure	Gross Capital Formation	Gross Fixed Capital Formation	Changes in Inventories	Acquisitions less disposals of valuables	Exports of Goods and Services	Imports of Goods and Services
2014	Initial Estimate	17.336,4	14.935,1	11.832,8	176,3	2.926,0	2.237,8	2.240,8	-23,0	20,0	11.508,6	11.345,1
	Balancing Adjustments	93,7	-32,9	-32,9	0,0	0,0	126,7	85,1	41,5	0,0	0,0	0,0
	Final Estimate	17.430,2	14.902,2	11.799,9	176,3	2.926,0	2.364,5	2.326,0	18,5	20,0	11.508,6	11.345,1
2015	Initial Estimate	17.896,8	15.028,9	11.916,0	187,5	2.925,5	2.399,9	2.254,3	56,5	89,2	12.537,0	12.069,1
	Balancing Adjustments	-12,8	-59,2	-58,4	0,0	-0,8	46,4	48,5	-2,1	0,0	0,0	0,0
	Final Estimate	17.884,0	14.969,7	11.857,6	187,5	2.924,7	2.446,3	2.302,8	54,4	89,2	12.537,0	12.069,1
2016	Initial Estimate	19.103,1	15.251,6	12.169,7	195,0	2.886,9	3.530,7	3.496,7	19,7	14,3	13.352,6	13.031,7
	Balancing Adjustments	-173,8	55,7	56,5	0,0	-0,8	-229,4	-67,6	-161,8	0,0	0,0	0,0
	Final Estimate	18.929,3	15.307,3	12.226,1	195,0	2.886,1	3.301,2	3.429,1	-142,1	14,3	13.352,6	13.031,7
2017	Initial Estimate	20.410,8	16.160,5	12.952,2	207,4	3.000,9	4.348,1	4.226,8	136,5	-15,2	14.969,3	15.067,1
	Balancing Adjustments	-165,5	-10,4	-10,4	0,0	0,0	-155,1	-2,9	-152,2	0,0	0,0	0,0
	Final Estimate	20.245,3	16.150,1	12.941,8	207,4	3.000,9	4.193,0	4.223,9	-15,8	-15,2	14.969,3	15.067,1
2018	Initial Estimate	21.805,1	17.135,9	13.768,2	217,1	3.150,5	4.388,2	4.109,9	262,9	15,4	16.225,4	15.944,3
	Balancing Adjustments	-192,5	15,4	15,4	0,0	0,0	-207,9	-39,0	-168,9	0,0	0,0	0,0
	Final Estimate	21.612,6	17.151,2	13.783,6	217,1	3.150,5	4.180,3	4.070,9	94,0	15,4	16.225,4	15.944,3

The largest balancing adjustments at product level and by variable of production and expenditure approach are calculated from the latest data available balanced at macro level - GDP Components. These adjustments are presented in the following tables for the years 2014 - 2018. A balancing adjustment is considered to be large if, the percentage change of the initial value is greater than 15% and at the same time the amount of change is of an absolute value of greater than €15 million.

Table 6.0.7: Largest Balancing Adjustments, 2014, € million

CPA code	Variable	Initial Estimate	Final Estimate	Balancing Adjustment
09.1	Gross Fixed Capital Formation	123,3	152,2	28,9
20.1	Intermediate Consumption	61,8	90,6	28,8
24.4	Intermediate Consumption	36,5	19,3	-17,2
26.2	Gross Fixed Capital Formation	45,5	69,5	24,0
33.1	Intermediate Consumption	86,1	60,0	-26,1
41.0	Changes in Inventories	-110,8	3,8	114,6
52.2	Household Final Consumption Expenditure	131,2	171,2	40,0
62.0	Gross Fixed Capital Formation	81,2	36,2	-45,0
77.1	Household Final Consumption Expenditure	75,9	60,4	-15,5
77.3	Intermediate Consumption	13,3	40,7	27,4
85.5	Gross Output	146,4	184,7	38,3

Table 6.0.8: Largest Balancing Adjustments, 2015, € million

CPA code	Variable	Initial Estimate	Final Estimate	Balancing Adjustment
09.1	Gross Fixed Capital Formation	143,9	193,4	49,5
15.2	Household Final Consumption Expenditure	163,6	131,5	-32,1
26.2	Gross Fixed Capital Formation	45,5	89,5	44,0
26.3	Household Final Consumption Expenditure	46,6	97,6	51,0
27.5	Household Final Consumption Expenditure	82,0	66,8	-15,2
28.1	Gross Fixed Capital Formation	58,7	43,0	-15,7
31.0	Gross Fixed Capital Formation	104,3	65,3	-39,0
32.4	Household Final Consumption Expenditure	37,8	54,3	16,5
32.5	Household Final Consumption Expenditure	31,1	48,2	17,1
45.2	Household Final Consumption Expenditure	136,4	158,9	22,6
52.2	Household Final Consumption Expenditure	109,5	146,5	37,0
55.9	Household Final Consumption Expenditure	42,2	27,2	-15,0
60.2	Household Final Consumption Expenditure	54,5	33,2	-21,3
62.0	Gross Fixed Capital Formation	58,4	28,4	-30,0
93.1	Household Final Consumption Expenditure	91,8	111,4	19,7
85.5	Gross Output	111,2	173,6	62,4

Despite the fact that most of the largest balancing adjustments in 2015 refer to Household Final Consumption Expenditure, the sum of all adjustments for this variable is €-58,4 million as appear in summary table “**Balancing Adjustments on Expenditure Approach for the period 2014-2018**” above. It is obvious that, most of these adjustments refer to partial or complete reclassifications among products consumed from Households. On the other hand, the absence of large balancing adjustments at product level in Intermediate Consumption is expected since, for 2015 (benchmark year) detailed data of Intermediate Consumption from annual surveys was used for the preparation of Intermediate Consumption matrix (NACE by CPA) as initial input to SUT framework. It should be noted that, the initial data of Intermediate Consumption matrix is benchmarked to the detailed data of annual economic surveys every 5 years.

Table 6.0.9: Largest Balancing Adjustments, 2016, € million

CPA code	Variable	Initial Estimate	Final Estimate	Balancing Adjustment
01.1	Intermediate Consumption	81,7	58,7	-23,0
19.2	Changes in Inventories	24,6	7,2	-17,4
24.2	Intermediate Consumption	55,0	12,1	-42,9
26.2	Gross Fixed Capital Formation	39,6	63,0	23,4
30.1	Intermediate Consumption	17,7	51,1	33,4
31.0	Gross Fixed Capital Formation	109,9	81,6	-28,3
41.0	Intermediate Consumption	644,6	741,4	96,8
49.41	Intermediate Consumption	128,4	159,2	30,8
51.1	Intermediate Consumption	80,1	150,6	70,5
58.2	Intermediate Consumption	73,6	123,6	49,9
61.1	Intermediate Consumption	182,2	96,1	-86,1
61.3	Intermediate Consumption	82,5	115,9	33,4
62.0	Gross Fixed Capital Formation	63,3	18,3	-45,0
68.1	Intermediate Consumption	15,9	31,7	15,8
68.3	Intermediate Consumption	62,7	90,5	27,8
71.1	Gross Fixed Capital Formation	72,7	53,8	-18,9
85.5	Gross Output	125,0	174,7	49,7

Table 6.0.10: Largest Balancing Adjustments, 2017, € million

CPA code	Variable	Initial Estimate	Final Estimate	Balancing Adjustment
24.1	Intermediate Consumption	99,1	115,3	16,2
26.2	Gross Fixed Capital Formation	42,9	65,3	22,4
30.3	Intermediate Consumption	55,8	25,4	-30,4
31.0	Gross Fixed Capital Formation	121,2	87,7	-33,5
33.1	Intermediate Consumption	153,0	123,2	-29,7
68.3	Intermediate Consumption	84,5	107,6	23,1
73.1	Intermediate Consumption	323,3	404,8	81,5
77.4	Intermediate Consumption	82,8	98,0	15,2

Table 6.0.11: Largest Balancing Adjustments, 2018, € million

CPA code	Variable	Initial Estimate	Final Estimate	Balancing Adjustment
01.2	Household Final Consumption Expenditure	118,5	97,0	-21,5
01.4	Changes in Inventories	-5,3	11,6	16,9
31.0	Gross Fixed Capital Formation	154,8	121,3	-33,5
33.1	Intermediate Consumption	133,8	159,0	25,2
63.1	Intermediate Consumption	35,9	67,6	31,7
63.9	Intermediate Consumption	4,1	25,6	21,5
64.1A	Intermediate Consumption	262,4	220,8	-41,6
73.1	Intermediate Consumption	455,1	386,7	-68,3
73.2	Intermediate Consumption	118,6	80,6	-38,0
77.4	Intermediate Consumption	104,5	139,4	35,0
82.9	Intermediate Consumption	29,7	109,8	80,1
86.9	Gross Output	90,9	106,0	15,2

For the reference years after 2015, most of the largest balancing adjustments refer to the Intermediate Consumption calculated-estimated at product level. This is reasonable, since Intermediate Consumption at product level is obtained from a model that has been developed within SUT framework in order to produce estimates based on previous year data and growth rates of production and price. Consequently, for products that have high volumes of Imports/Exports compared to their local production, the model cannot provide high quality estimates of Intermediate Consumption at product level. Therefore, relevant corrections are made during the balancing procedure.

Other large balancing adjustments, that are repetitive through years, are investigated and if there is strong evidence for exhaustiveness adjustment, this is implemented for the following reference years. Specifically, for product “Other education services” (CPA 85.5) an adjustment has been applied to Gross Output during the balancing procedure for the last years (2016 backwards). After investigation, it was concluded that an exhaustiveness adjustment (N1) should be made to National Accounts data prior to entering the SUT framework. This exhaustiveness adjustment is implemented from reference year 2017 and onwards (see section 7.1).

6.1 GDP balancing procedure

6.1.1 General description of the mechanisms in place for balancing procedure

The rationale, that underlines the SUT, demands a zero difference between supply and use of goods and services in the economy under review. During the balancing procedure differences between supply and use are examined at product level (by row) for a total of 289 products and solutions are given against either supply or use, so that the gap between the two is narrowed to zero.

The general rule that governs the balancing procedure demands that differences by row (product) are examined closely and with priority given to the most significant ones; solutions are given against either supply or use, depending on the quality of each set of data regarding the product under review.

It should be noted that products like “FISIM”, “Imputed Rentals” and “Insurances” are balanced prior to balancing procedure and consequently, no balancing adjustments are made. In case, the data is not balanced, investigations for data errors are made, the initial data is corrected and finally, reloaded to the balancing system.

Overall, the data that populates SUT framework is considered to be adequate, in both qualitative and quantitative way. In general, data on domestically produced output, imports and exports of

goods by product are considered to be the most reliable sets of data available, since detailed product analysis is obtained from annual surveys (or censuses) and the External Trade Division respectively.

Data on Intermediate Consumption is obtained from a model that has been developed within the SUT system framework in order to produce estimates based on previous year data and the growth rates of production volume and prices. Imports and exports of services are obtained from Balance of Payments provided by the Central Bank. Thus, although total values and the values of main categories of products are considered to be accurate, because of the restricted product breakdown obtained from the questionnaires, further detailed analysis by product is necessary which is subject to revisions during the balancing procedure.

In terms of total values and main categories, production approach is predominance to expenditure approach since in general, the datasets of production approach are considered to be more reliable than the ones of expenditure approach. Production and Expenditure approaches are independent. However, income approach has not been yet incorporated in the mechanism of balancing procedure.

Exhaustiveness adjustments are applied independently across the two approaches that are currently used and they are not part of the balancing procedure. This action takes place prior to balancing procedure, so that they are already incorporated in the exogenous data that is used as input in the balancing system. No balancing adjustments cancel out any exhaustiveness adjustments made prior to balancing procedure.

Having said that, the balancing approach that is followed, ensures the elimination of the differences between supply and use by row (product) with small (if any) divergence from original by activity (column) data. This original (column) data is the published national accounts data at NACE level and is used as targets of the production approach during the balancing procedure. These targets can be revised by the supervisor of the balancing procedure at the end of each balancing cycle, if there is strong evidence from the data analysis in order for the system to reach a feasible balanced solution. On the other hand, there are no targets of the expenditure approach for the reason already mentioned above.

The balancing procedure follows a manual approach, eliminating bigger differences first with the priority given to row balancing. In the case of a solution given on row (product) against the Intermediate Consumption matrix, the difference is either allocated to a unique activity (NACE) or is proportionally allocated in the system using an automatic approach if the product under review is of the kind that is more or less consumed from all NACEs (e.g. fuels, cleaning or stationary etc.). This

has proven to be an appropriate approach, since through it the identification of data misclassifications, weaknesses or inadequacies is enabled.

Following the balancing procedure and the assessment of the “before” and “after” balancing data and the solutions given against supply or demand data, it became obvious that apart from a number of cases which are discussed later in the text, most differences at detailed product level could be attributed to data misclassification or, as mentioned above in the text, to unavailability of adequate analysis by product (CPA).

Total values of “Imports/Exports of Goods and Services”, “General Government Final Consumption” and “Consumption of Non-profit Institutions Serving Households” are locked on aggregated level since the data sources are considered to be reliable. However, reclassifications within products are possible due to the fact that the allocation to products is not a standard procedure because of the nature of the variables.

6.1.2 SUT in the process of finalising the annual national accounts estimates

Supply and Use Tables framework makes optimal use of all available sources of the reference year and are populated with both annual surveys as well as administrative data. These include:

- Agricultural Statistics
- Manufacturing Statistics
- Construction and Housing Statistics
- Wholesale and Retail Trade Statistics
- Hotels and Restaurants Statistics
- Transport Statistics
- Economic Statistics on Education, Health and Other Social and Personal Service Activities
- External Trade Imports and Exports Statistics
- The Government budget
- Balance of Payments Statistics
- VAT and other taxes and subsidies data
- Private Final Consumption data
- Public Sector and Semi-Government Organizations data

SUT are compiled annually in accordance with the definitions and methodology of the system of National Accounts as these are defined in ESA2010. The data that populates the tables is presented in NACE and CPA classification. Although the data is processed at a more detailed breakdown by NACE/Sector and CPA classification (2-digit NACE/Sector and 3-digit CPA), the Supply and Use Tables are presented at 2-digit NACE classification level (columns) and 2-digit CPA classification level (rows). The most recent version of the supply and used tables that has been prepared refers to the year 2018.

The decision to use this level of processing is based first of all on the quality of the data under review (data availability and weaknesses) as well as on their relative level of importance in the economy of Cyprus. Furthermore, since SUT are compiled at previous-year-prices as well, the product/industry breakdown adopted is in conjunction with the available data on price and volume indices, so that comparison of results and high level of consistency between SUT in market and previous-year-prices is ensured.

All data included in the SUT is adjusted to ESA2010 definitions, completed for coverage and reconciled with data on output from data sources of GDP by the production approach. Furthermore, the data incorporates all revisions made in the system prior to the balancing procedure.

The data sources, where possible, are checked against other relevant data sources that are available to CYPSTAT and can be used to judge the quality of the main data sources for SUT. For example, the CYPSTAT's business register and that of Balance of Payments are compared systematically between each other and any relevant information is exchanged so that the two registers are consistent.

Currently, as already mentioned earlier in the text, SUT framework is used to finalize GDP for the reference year T-3 and make any necessary backward revisions. Furthermore, SUT framework is used to produce preliminary balanced (at detailed level) estimate of the level of GDP for the year T-2. As a result, for GNI Questionnaire purposes only T-1 estimates are balanced at macro level outside SUT framework. It should be noted that, at the end of each balancing cycle, the results of SUT are confronted with the already published data at NACE section level.

The medium-term goal is to prepare SUT, at the time when the national accounts can use them as part of their annual compilation process at NACE level and main variables, for the finalization of the year T-2. For this reason, the team, that has been set up in order to focus only on the production of SUIOT, has explored and incorporated new functionalities in SUT-Equalizer software in order for the system to be more efficient, by providing historical info (documentation of the adjustments and their values) and useful tools to the users and the coordinator during balancing procedure. However,

the timely availability of data sources is crucial in order to fully integrate SUT framework into the annual compilation process of national accounts estimates.

6.1.3 Data Sources

6.1.3.1 Domestic production of goods and services

The Output data included in the Supply and Use Tables is provided from the compilers of National Accounts at a detailed level of CPA and NACE classification. Domestic production of goods and services by NACE and CPA at basic prices are included in the system as a 289 products (CPAs) by 262 activities (NACE/Sector combinations) matrix, the Production matrix (simplified rectangular system). The values entered in the main diagonal of the matrix represent the principal (primary) production of the industries. The secondary output of the industries is listed outside the main diagonal. The breakdown into primary and secondary activities and by products is elaborated within the compilation of SUT and the distinction is made according to the main activity of each industry and is established by the structure of NACE Rev.2 and CPA.

The procedure combines detailed data on products from statistical surveys and aggregated activity data by accounting statements and administrative sources. Thus, the 2017 data incorporated in the Production matrix is obtained from questionnaires and statistics published in CYSTAT for all industries. The aggregation level is as low as 6-digit CPA in most cases (Manufacturing industries, Agriculture and Construction, all other Industries at 4-digit CPA). However, for balancing purposes the data is aggregated at the 3-digit level of CPA. The Production matrix includes all components of Gross Output realized by each industry. These would be:

- Production of goods
- Services rendered to others
- Repairs rendered to others
- Cost of semi-finished goods
- Fixed assets produced for own account
- Other receipts (rentals, commissions, other)
- Profit realized from the sale of goods

6.1.3.2 Output produced for own final demand

This item consists of goods or services produced by the household sector that are retained for own final use. The data includes mainly agricultural products and imputed rentals(dwelling services). In order to be incorporated in the SUT framework they are classified to 3-digit CPAs.

6.1.3.3 Intermediate Consumption

The Intermediate consumption data in the Supply and Use Tables refer to goods and services by NACE and CPA at purchaser's prices and are allocated in the system in the form of a matrix 289 (CPAs) by 262 (NACE/Sector combinations), the Intermediate Consumption matrix. The 2017 data included in the Intermediate Consumption matrix is obtained from a model developed as part of the SUT system framework.

In general, this model uses as input the final Intermediate Consumption matrix results of the previous year (2016 in this case) and the growth rate of production volumes from 2016 to 2017 at NACE/Sector level (columns) in order to calculate the 2017 quantities of Intermediate Consumption matrix. Finally, by using the price growth rate at product level (rows) the model computes the new estimated values of 2017 Intermediate Consumption matrix at current prices.

This model proves to be an adequate one in order to produce estimated values for Intermediate Consumption matrix to be used as the starting point of the balancing procedure. During the various balancing cycles, Intermediate Consumption matrix is overwritten/changed appropriately in order to adapt the various characteristics, special cases and limits of the new year (2017) which is under examination.

Every 5 years, the Intermediate Consumption matrix is populated with the detailed results of economic surveys conducted in CYSTAT and other administrative sources along with any necessary disaggregations/aggregations in order to reach the desired level of NACE and CPA. The last reference year, for which Intermediate Consumption matrix was populated with actual data from sources, is the year 2015 (benchmark year) and since then the model (described above) is used for estimating each next year under examination.

In a number of cases the data is available by "category of expense", providing insight to the expenditure profile of each NACE. The expenses are analyzed in the following categories:

Production Expenses

- Raw Materials
- Packing Materials

- Fuels for Light and Heat
- Other Materials
- Water
- Electricity
- Repairs of Machinery by Others
- Repairs of Machinery by the company technicians
- Repairs of Buildings
- Transport Costs
- Services by Others
- Other Direct Expenses

Administrative Expenses

- Post and Telecommunication Services
- Advertising
- Legal and Accounting Services
- Technical Consultations
- Bank Charges
- Warehousing
- Insurance
- Entertainment
- Subscriptions
- Travelling
- Other Indirect Expenses

Rentals

- Rentals for Buildings
- Rentals for Machinery

In order to populate the Intermediate Consumption matrix, the data has to be allocated to the appropriate 3-digit CPAs. Although the analysis of the data available from the aforementioned sources is adequate to some extent to facilitate this procedure (e.g. raw materials, water/electricity

expenses), some categories of expenses like other direct and indirect expenses and services by others has to be analysed to detailed product CPA classification using information obtained by ad-hoc surveys or in some rare cases personal judgment. Having in mind the accuracy of the Intermediate Inputs data by NACE, but on the same time its vulnerability at a product level at the cases concerned, the CPA analysis of Intermediate Consumption is revised during the balancing procedure.

Intermediate Consumption data is distinguished between data concerning NACEs under Deductible and Non-Deductible Tax Regime. Non-Deductible Intermediate Consumption is required to facilitate the accuracy of the calculation of Value Added Tax (see details later in the text).

6.1.3.4 Imports and Exports of goods

All imports and exports of goods data is collected from the External Trade Division of CYPSTAT. Data on imports of goods includes information on Total Imports, Imports for Home Consumption and Re-Exports. Data on exports of goods includes information on Total Exports, Domestic Exports, Re-Exports and Ship stores (see chapter 5.13 & 5.15 for details on data collection and compilation).

According to the definitions adopted in the ESA2010, imports and exports of goods should be recorded at border values or free on board (f.o.b). The data obtained from the External Trade Division provides information on exports valued at f.o.b prices and imports valued at the importer's customs frontier (c.i.f). The incorporation of imports and exports of goods data in the SUT framework requires detailed product breakdowns valued at c.i.f and f.o.b prices respectively and the adjustments from Balance of Payments in order to be consistent with ESA2010 and BPM6.

The incorporation of the data obtained from the External Trade Division in the National Accounts framework and the SUT framework in particular, requires its reclassification from the 8-digit CN detailed product breakdown to 6-digit CPA breakdown. The reclassification procedure is based on the CN-CPA conversion key provided by Eurostat.

6.1.3.5 Imports and Exports of services

The estimation of imports and exports of services is based on data obtained from the Balance of Payments which is provided by the Central Bank of Cyprus. The data is subject to adjustments in order to comply with the methodology as defined in the context of the ESA2010 (see chapter 5.14 & 5.16) or facilitate the preparation of the Supply and Use Tables.

Furthermore, the service category breakdown of the Balance of Payments is replaced by the CPA detailed product classification, whereas the items “Travel” and “Government Services n.e.c.” are separately analyzed to achieve more accurate product-level results.

Travel

Expenditure on travel as this is recorded in the Balance of Payments is analyzed based on the results of a tourist expenditure survey conducted monthly at the airport, according to which the expenditure of tourists in the economic territory may be distinguished in the following categories:

- Transport
- Accommodation
- Food, Drinks, Tobacco
- Clothing, Footwear
- Health
- Inland Transport
- Rental services of sea-going vessels with crew
- Communication
- Recreation, Culture
- Miscellaneous Goods and Services

The expenditure on education, which is included in the total value of travel, is estimated and provided separately from Balance of Payments, for better accuracy.

The breakdown structure of the expenditure of non-residents in the economic territory is analyzed and revised at the 3-digit level of CPA classification as a result of the balancing procedure.

In the absence of other sources, the results of the tourist expenditure survey mentioned above are also used for the breakdown of the expenditure of residents in the Rest of the World, under the assumption that they follow a similar consumption pattern and are again revised when necessary, during the balancing procedure.

Government Services n.e.c.

Government Services n.e.c. include transactions regarding the operations of embassies and consulates, and military units and agencies. The corresponding values of Imports and Exports are treated independently.

6.1.3.6 Final Consumption of Households

The data on the Final Consumption of Households that is included in the Supply and Use Tables is obtained from the respective compiler within the National Accounts Division (see chapter 5.7). For its incorporation in SUT framework, the data from the Household Budget Survey (HBS) is reclassified from the original 6-digit COICOP to 6-digit CPA and then aggregated further to a final 3-digit CPA classification.

6.1.3.7 Non-Profit Institutions serving Households

This set of data is again obtained from the respective compiler within the National Accounts Division (see chapter 5.8). In order to meet the presentation requirements of the SUT, the expenditure of the Non-Profit Institutions serving Households is disaggregated to the appropriate 3-digit CPAs.

6.1.3.8 Gross Fixed Capital Formation

The data on Gross Fixed Capital Formation that is included in the SUT consists of both domestically produced and imported goods. The basic sources of this data are the annual economic surveys and censuses (see chapter 5.10 for details).

Data on Capital Formation from the “Use side” of view is available by a kind-of-product analysis, in the following categories:

- Construction
- Machinery and Equipment (excl. Furniture)
- Furniture and Fixtures
- Weapons systems
- Motor Vehicles
- Ships
- Aircrafts
- Furniture and Fixtures
- R&D
- Mineral Exploration
- Information and Communication Technology (excl. Computers)
- Computers
- Software

- Plantation
- Breeding Stock
- Literary and Artistic Originals
- Own Account Production of TV Programs

The data is then further analyzed in 3-digit CPA products to the point where the information available makes this procedure feasible.

Gross Fixed Capital Formation data is also distinguished between data concerning NACEs under Deductible and Non-Deductible Tax Regime. This analysis is required to facilitate the calculation of Value Added Tax (more details later in the text).

6.1.3.9 Government Expenditure

The data on Government Expenditure for the year 2017 is obtained from administrative sources being available to CYPSTAT and more specifically the Budget for the economic year 2017 (see chapter 5.9). Prior to the incorporation in the SUT framework all data has to be classified under 3-digit CPA product classification. For this purpose, the very nature of each Budget item is examined in detail and a single CPA is assigned using as guidance the details and the description of the structure analysis of these items.

6.1.3.10 Changes in Inventories

Information on Changes in Inventories is gathered from the economic surveys and the data is available at the 3-digit NACE classification level, although the information is limited to the type of stocks (Finished and Work-in-progress goods, Materials, Supplies & Fuels and Goods purchased for Resale) and their values, without any further analysis on their composition. Holding Gains are excluded from changes in inventories, as detailed described in chapter 5.11. The following approach is adopted for 3-digit CPA allocation:

Finished and Work-in-progress goods

For the stocks type “Finished and Work-in-progress goods” the allocation into 3-digit CPA is achieved under the general assumption that in each 3-digit NACE activity, the enterprises have a policy to hold in stock only those goods that are mainly produced.

Materials, Supplies and Fuels

A similar general assumption is used in the case of stocks type “Materials and Supplies”. In this case the proxy used is the percentage distribution of the most important raw materials in the production

process that should be kept in stock by the enterprises; therefore the 3-digit CPA allocation must follow the structure of the relevant intermediate inputs analysis in each 3-digit NACE. Fuels are collected separately and allocated to the appropriate product.

Goods Purchased for Resale

The assumption underlining the CPA allocation in this case is that enterprises are expected to get involved in trading of goods that are characteristic to their main activity.

Given the unavailability of the data by detailed product analysis and the number of assumptions made until the required analysis is finally obtained, the product analysis of the data on Changes in Inventories is subject to revision during the balancing procedure.

6.1.3.11 Taxes and Subsidies (excl. VAT)

Taxes and Subsidies are included in the Supply and Use Tables to facilitate the transformation of the supply of goods and services from basic to purchaser's prices. Taxes included in SUT consist of Taxes on products, Taxes on imports, Custom duties and Subsidies on products. As in the case of all data populating the SUT, Taxes and Subsidies on products are assigned 3-digit CPAs.

6.1.3.12 Trade Margins

Trade Margins generated in NACE 45 (Wholesale and retail trade and repair of motor vehicles and motorcycles), NACE 46 (Wholesale trade, except of motor vehicles and motorcycles), NACE 47 (Retail trade, except of motor vehicles and motorcycles) and in other Industries (NACEs) are analyzed separately.

Although Trade Margins are available by NACE, their value has to be broken down into product level. For reference year 2017, only the 5-annual survey of NACE 47 was available at groups of CPA level, however there were not similar datasets available at CPA level in Trade sector of NACE 45 & 46, since surveys by CPA are conducted every 5 years and not for the same reference year for the three NACE sectors. Therefore, the final distribution of trade margins to product level for 2016 was used as a proxy in order to estimate the trade margins for 2017 at product level for Trade sector 45 & 46. For Trade sector 47, the distribution of trade margins for 2016 was used in a way to compare with the new distribution of trade margins for 2017 and make any necessary changes/modifications based on expert judgement and historical data.

6.1.3.13 Value Added Tax

Value Added Tax in the SUT framework is calculated by applying VAT rates on the taxable values at the 3-digit level of CPA classification. The taxable values in the system refer to Intermediate

Consumption of enterprises operating under Non-Deductible VAT regime, Market Final Consumption of Households and Gross Fixed Capital Formation of enterprises operating under Non-Deductible VAT regime.

As mentioned earlier, Intermediate Consumption and Gross Fixed Capital Formation tables are very detailed, so that information on the transactions of all enterprises operating under a Non-Deductible VAT regime is available by 4-digit NACE or individual organization level. The same data sets are supplied to the VAT Department for the calculation of the Value Added Tax own resources of the European Union.

Since taxable values by product included in the SUT framework are subject to revision during the balancing procedure, the value of non-deductible VAT by CPA is altered according to the solution given for each row (CPA).

6.1.3.14 Assessment of data sources

Overall, the amount and quality of statistical data available is considered to be adequate to facilitate the compilation of SUT. However, some weaknesses are identified in the system of the SUT framework regarding the data availability. These would include:

Balance of Payments

Besides the values under the headings "Travel" and "Transport" which account for most of the transactions recorded in the Balance of Payments, there are also other items that are of significant importance in value terms and for which the information provided is not available at the required detailed product level. These would include "Other Business Services" and in particular "Business, Professional and Technical Services".

Government expenditure

Since the provided information in regard of the nature of certain expenditure items is not adequate, the allocation to 3-digit CPAs is also made according to assumptions, e.g. cleaning expenses; raw materials etc.

Banking, Insurance and other activities auxiliary to Financial Intermediation

Data on Financial Intermediation services is not available at a detailed product level and therefore various assumptions and judgments are necessary in order to allocate them to 3-digit CPAs.

Changes in Inventories

In the case of Changes in Inventories, assumptions have to be made concerning the type of products that each industry (NACE) would keep in stock.

6.2 Other approaches used to validate GDP

All available supply-side and demand-side data is confronted with each other except the income-side which has not been yet incorporated in the mechanism of balancing procedure. For the sources which are not considered to be solid, data is examined thoroughly to identify the fields and the level of weaknesses in order to make the appropriate adjustments.

Any unexplained discrepancies are imputed to least firmly based items based on a judgmental process where the user during the balancing procedure substantiates any value changes. All available datasets are confronted during balancing procedure or prior to entering SUT framework. For example, the repetitive balancing adjustment through years for product “Other Education Services”, as discussed earlier in the text, was made due to the fact the HFCE component of this product proved to be more reliable than its production value (output) which was underestimated because of some underground activities, such as gymnastics and sport instruction, as well as dance and music instruction (see chapter 7.1.3). On the other hand, the results of Household Budget Survey (HBS) for the final consumption of alcoholic, beverages and tobacco products are considered to be underestimated and therefore adjustments to this data are made (see chapter 5.7) prior to entering SUT framework.

The coordinator/supervisor reviews also the changes and the related rationale prior to acceptance or rejection of proposed changes in order to ensure the correctness of the changes and where these changes are imputed.

As a result of the way the balancing procedure is executed, the relationships between various components look consistent over time. Especially, components for which data sources are not considered solid look quite consistent. For example, for the last three years (2016-2018), Intermediate Consumption is around 36% of the total use, Final Consumption is around 30% of the total use and Gross Fixed Capital Formation is around 7% of the total use.

Mostly, for the supply side, data from annual surveys conducted in CYSTAT is used; where a lot of validations checks run during the data collection, punching and grossing up procedure. The administrative data is mainly collected from government departments, central bank, commercial and cooperative banks as well the insurance companies. Thus, the need for cross checking with other data sources is minimal.

Besides Supply and Use tables, there are other approaches that are used as alternative ways to validate GDP. The compilation procedure of the Quarterly National Accounts (QNA) is one approach since their compilation is based on short term indicators produced by CYSTAT.

The QNA compilation is based on an indirect approach. Thus, each account series is linked to one or more related quarterly series, available at the time of compilation of the QNA. Apart from the estimation of single series, statistical methods are also used in order to achieve the accounting relationships. It is important to stress that the quality of the final results in the estimation of QNA depends on a number of factors, the most important being the quality of the indicators used. In other words, the ability of short-term indicators to provide reliable and timely information on the evolution of the variables under study is an essential feature which is addressed at the preliminary stage of selecting these indicators. The selection procedure refers to analyzing their reliability, in terms of timeliness and coherence with the sources generally used in estimating annual national accounts. The relative ability in explaining the corresponding annual figures is exploited through standard econometric tests derived from the annual relationships, as obtained by the QNA econometric model. Temporal disaggregation techniques are thus applied to decompose the annual figures. The Chow-Lin approach is then employed to disaggregate the data on the basis of one or more related indicators observed at higher frequency (monthly or quarterly).

An important feature of the model is the conduction of a simulation procedure; that is the ability of the estimated models to give reliable forecasts during the course of the year. The QNA estimates are used for the first annual estimates.

The annual models are used for the past years, leaving outside the current year. The Chow-Lin quarterly disaggregation procedure is applied and the estimates of the four quarters of the current year are obtained by extrapolations, considering the short-term paths of the relevant related time series. A comparison between the results shows whether there is or not relevant divergence between the estimates obtained through the annual NA and those from the QNA.

At the same time, assessments are made to check whether the GDP data is consistent with other data, namely employment and prices. The macroeconomic relationship between current and volume data is important in testing the evolution of these variables over the years. Another benefit is that price and volume measures can be derived for the important balancing items. In particular, gross value added can be measured in previous-year-prices by subtracting intermediate consumption from output (“double deflation”).

The compilation of price and volume measures within an accounting framework like the SUT is a major advantage in checking the numerical consistency and plausibility of the entire set of the accounts.

Finally, the medium-term goal is to establish a validation process against Quarterly Supply & Use Tables (QSUT). This is not expected before 2025, since QNA section plans to start a project early next year in order to develop a new tool for producing QNA estimates with two options; the 1st option is the traditional way (use of econometric models and short-term indicators) and the 2nd one through the compilation and use of QSUT. Supply & Use Tables provide the most detailed data analysis which can facilitate the correction/adjustment of national accounts data.

CHAPTER 7: OVERVIEW OF THE ALLOWANCES FOR EXHAUSTIVENESS

7.0 Introduction

7.0.1 Geographical coverage

According to ESA 2010 paragraphs 2.05-2.07 and the Commission Regulation (EC) No 109/2005 on the definition of the economic territory of Member States for the purposes of the GNI Regulation, the term “economic territory” consists of the following:

- a) the area (geographic territory) under the effective administration and economic control of a single government; for the case of Cyprus, the geographic territory includes the government-controlled area, excluding the part of the island occupied by Turkish troops since the invasion of 1974.
- b) any free zones, including bonded warehouses and factories under customs control;
- c) the national air-space, territorial waters and the continental shelf lying in international waters, over which the country enjoys exclusive rights;
- d) territorial enclaves, these being geographic territories situated in the rest of the world and used, under international treaties or agreements between states, by general government agencies of the country (such as embassies, consulates, military bases, scientific bases, etc.); and
- e) deposits of oil, natural gas, etc. in international waters outside the continental shelf of the country, worked by units resident in the territory as defined in points a) to d).

Institutional units considered as residents are those who have a centre of predominant economic interest in Cyprus and are registered in the Business Register (BR), which is updated continually. In the absence of any physical dimension to an enterprise, its residence is determined according to the economic territory under whose laws the enterprise is incorporated or registered.

7.0.2 General approach to exhaustiveness

The predominant approach for the measurement of GDP in Cyprus is the Production approach. CYSTAT conducts on an annual basis economic surveys covering the great majority of the NACE activities. For activities not covered by these economic surveys (i.e. NACEs 64 & 65) and for public sector, administrative data is used.

Nevertheless, for exhaustiveness purposes, the data origin from the Production approach is compared with data from the Demand side, mainly the Household Budget Survey (HBS). In addition, expert estimates and ad-hoc surveys are used for the estimation of some non-exhaustiveness types together with, in some cases, information from administrative sources. For example, for the production and trafficking of drugs, information is obtained from the police department, from the main anti-drug non-profit organization and from the National Monitoring Centre for Drugs, together with expert estimates and ad-hoc surveys.

The valuation of the exhaustiveness adjustments is made at basic prices for the case of output and at purchasers' price for the case of adjustments to the intermediate and final consumption. Nevertheless, for most of the exhaustiveness types, the adjustment to output at market or basic prices is the same since taxes on products (D.21) are not relevant (i.e. Illegal activities, own-account production, employment method). For the types of non-exhaustiveness for which the adjustment to output is based on the HBS, an adjustment is made to the COICOP codes as obtained from the HBS (purchasers' prices), in order to subtract the value of the VAT.

The allowances for exhaustiveness are reviewed regularly through the Supply and Use Tables (SUT) framework, which, during the balancing procedures, allows the identification of any areas that explicit exhaustiveness estimations need to be revised. It is ensured that the SUT balancing decisions do not cancel the exhaustiveness adjustments.

7.1 Allowances for exhaustiveness in the production approach

7.1.1 Identification of types of non-exhaustiveness

This section describes the different sources and methods used by CYPSTAT in calculating exhaustiveness adjustments for each of the seven non-exhaustiveness types (N1 to N7). The identification of the types of non-exhaustiveness was based on the Commission Decision No 94/168/EC on measures to be taken for the implementation of Council Directive 89/130/EEC, Euratom on the harmonization of the compilation of Gross National Product (GNP) at market prices. Non-exhaustiveness types include the following:

- N1 - Producer deliberately not registering - underground;
- N2 - Producers deliberately not registering - illegal;
- N3 - Producers not required to register;
- N4 - Legal persons not surveyed;
- N5 - Registered entrepreneurs not surveyed;
- N6 - Producers deliberately misreporting; and
- N7 - Other statistical deficiencies.

a) Non-exhaustiveness type N1: Producers deliberately not registering – underground activity

According to the guidelines, type N1 is associated with small producers who intentionally avoid registration in order to avoid tax and social security obligations or in order not to lose social benefits (for example the unemployment benefit for those who are registered as unemployed).

Until recently, no type N1 explicit adjustments were made, however, following the SUT balancing results of the last years it became apparent that two specific exhaustiveness adjustments should be made as of 2017.

The first exhaustiveness adjustment relates to activity via Airbnb and other platforms in Cyprus. Owners of dwellings are renting their properties for a short period without registering the houses and apartments in the relevant official list of the Deputy Ministry of Tourism. As a result, they avoid paying tax and their Output is not included in the NACE I activity as obtained from the annual economic surveys conducted by CYSTAT.

Another exhaustiveness adjustment stemming from the SUT balancing results of years 2010-2016 concerns the non-registered activity of NACE P (i.e. gymnastics, sport instruction, music instruction). As it was proved from the SUT balancing of previous years, an implicit adjustment is made to the Output for education, proving that there is significant underground activity. It should be noted that this N1 type exhaustiveness adjustment is over and above the N6 type adjustment made to NACE P.

The SUT balancing did not give ground to believe that an explicit adjustment should be made to other activities and in any case smaller underground activities are implicitly covered in SUT. In addition, a theoretical overlap that could exist between the types N1, N4-N5 is believed to be covered globally by the use of the labour input method (the employment reconciliation check).

Employment reconciliation is considered to be one of the most important aspects of the verification process of the exhaustiveness of GDP statistics. Under the framework of the employment reconciliation, wide-ranging comparisons are made between employment data from population statistics and employment data from individual industries, in so far as the latter are included in the GDP calculations, with a view to identifying any under coverage (see non-exhaustiveness types N4/N5).

b) Non-exhaustiveness type N2: Producers deliberately not registering – illegal activities

Type N2 includes producers that deliberately fail to register as a legal entity or as entrepreneurship because they are involved in illegal activities. For the case of Cyprus this type N2 includes estimations on the illegal activities of prostitution and drugs. Adjustments are included in NACE A and NACE G for the case of drugs, and NACE S for prostitution. No adjustments were made for smuggling, since the smuggling activity of tobacco and alcohol products appears to be insignificant in Cyprus.

c) Non-exhaustiveness type N3: Producers not obliged to register

Under type N3, CYPSTAT made exhaustiveness adjustments for producers that are not required to register because they have no market output. These producers are household units that (a) produce goods for own consumption and (b) build own-construction dwellings.

For households units under case (a) CYPSTAT investigated the issue and acknowledged that these activities involve hunting and sport fishing (NACE A). For case (b), exhaustiveness adjustments are made in order to cover own-account construction, not captured by the construction survey (NACE F).

In addition, a marginal adjustment was made for household producers that have some market output but is below the level at which the producer is expected to register. This was the case for Cottage industry activities pursued at home such as embroidering, weaving and basketry (NACE C).

d) Non-exhaustiveness types N4/N5: Registered legal persons or entrepreneur is not included in statistics

According to the guidelines, type N4 is associated with legal persons that may not be included in the statistics for a variety of reasons (Business Register out of date, threshold issues etc.).

Currently, there are no thresholds existing in the case of the Business Register. Also, there is no threshold for social security registration. Even in the case of households employing domestic staff, these units are covered again by the use of social security records, since it is compulsory (by the law) for these households to pay social security contributions for their staff.

The existence of the official Business Register and its continuous update give no ground to believe that Cyprus faces any non-exhaustiveness problem of type N4. CYPSTAT currently maintains two registers of establishments: (a) the Business Register for non-agricultural units and (b) the Register of Agricultural Holdings

The Business Register for non-agricultural units is updated on a monthly basis using information from (i) Business Registrar (ii) VAT department and (iii) Social Insurance security department.

The Register of Agricultural Holdings is formed based on the Census of Agriculture, the last conducted in 2020. The Census covers all agricultural and livestock holdings. The Register of Agricultural Holdings is updated for the period between censuses using information collected from several annual sample surveys (i.e. survey on vineyards, survey on cereals, survey on crops, farm structure survey etc.), as well as from administrative sources.

Nevertheless, the employment reconciliation exercise revealed that the employment of a specific activity (NACE 66.2 - Activities Auxiliary to Insurance and Pension Funding) was underestimated and thus an exhaustiveness adjustment should be made.

e) Non-exhaustiveness type N6: Producers which deliberately misreport

According to the guidelines, type N6 is associated with deliberate mis-reporting by the producer in order to evade taxation (reduce income tax, VAT or social security contributions). Under type N6, CYSTAT made consistency checks for NACE F (Construction) and NACE G (Distributive Trade), as recommended by the GNP Committee Task Forces on Construction (CPNB/202) and Distributive Trade and Horeca (CPNB/205).

Mis-reporting is currently dealt by CYSTAT with the following measures for verifying data:

- Cross-checking of answers given to related questions in the various questionnaires used.
- Comparison of data obtained from the same surveys in the past or from other surveys, such as the Household Budget Survey.
- Comparison of data obtained from administrative sources concerning the measurements of the same or related terms, usually presented at the industry level.
- Examination of data in respect to specific ratios constructed from past surveys.

The ratios that are constructed for NACE sections and subsections and used at the unit level for comparison purposes are the following in each case as shown in the Table:

Table 7.1.1: Ratios constructed for NACE Sections

NACE Code	NACE Activity	Ratios used
A	Agriculture, forestry and fishing	Number of animals/Intermediate consumption Number of animals / Employment
C	Manufacturing	Raw materials / Gross Output Packing materials / Gross Output Raw materials & Packing materials / Gross Output
G	Wholesale and retail trade; Repair of motor vehicles and motorcycles	Gross Output / Turnover Gross margin /Sales Value Added / Turnover Value Added / Person engaged Labour Cost / Person engaged Stock / Sales
H	Transportation and storage	Relation between (a) Direct, Administrative and other costs (b) Margins and Turnover
I	Accommodation and food service activities	Relation between (a) Inputs and Output (b) Inputs and Turnover
J	Information and communication	Relation between (a) Inputs and Output (b) Inputs and Turnover
M	Professional, scientific and technical activities	Relation between (a) Inputs and Output (b) Inputs and Turnover
N	Administrative and support service activities	Relation between (a) Inputs and Output (b) Inputs and Turnover
P	Education (private)	Relation between (a) Inputs and Output (b) Inputs and Turnover
Q	Human health and social work activities (private)	Relation between (a) Inputs and Output (b) Inputs and Turnover
R	Arts, entertainment and recreation	Relation between (a) Inputs and Output (b) Inputs and Turnover
S	Other service activities	Relation between (a) Inputs and Output (b) Inputs and Turnover

The SBS section during the validation procedures at micro level performs the above examination in terms of these ratios and any significant differences that are identified lead immediately to further investigation for (a) checking the data reliability once more or (b) finding convincing evidence for the existence of this difference, i.e. the factors responsible for this difference.

Based on the indications that appear from the adoption of the above-mentioned measures, SBS section makes the necessary misreporting exhaustiveness adjustments to the micro data. The economic activities in which adjustments were made are: NACE 56 (food service activities), NACE 86.2 (medical and dental practice activities), NACE 95 (Repair of computers and personal and household goods) and NACE 96.02 (Hairdressing and other beauty treatment).

The necessity for the exhaustiveness adjustments to the gross output of these NACEs is also evident from the fact that in these activities a significant number of self-employed persons is engaged and the payments made are mainly cash payments, making it easy to hide turnover from the tax authorities.

In general, it can be said that the adjustments made for the estimation of the concealed production as well as the corresponding labour cost were established after experience accumulated over the years and through the communication channels with people engaged in these activities.

Consistency checks in NACE F (Construction)

In NACE F (Construction), there are two independent available sources of data. These are the annual structural business survey on “Construction activities” and the annual expenditure survey on “Building Permits and Housing” (BPHS). The first is an economic type of survey (SBS), which also provides information on revenue for subcontracting activities in construction. Furthermore, the annual expenditure survey on BPHS is based on the building permits authorized.

Following the GNP Committee Task Force on Construction (CPNB 202) related to exhaustiveness, the results of both surveys are regularly confronted to each other by the SBS section for validation purposes. In addition, information is collected from administrative sources (Government budget, public organizations, local government) to supplement and/or confront with the abovementioned surveys. Furthermore, employment reconciliation is carried out for all NACE activities, including Construction. Finally, information on exports of services on construction is collected from BoP statistics.

Consistency checks in NACE G (Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods)

Concerning retail trade in NACE G, exhaustiveness is ensured by regularly checking the benchmark estimates for the consumption of households against the Retail Trade results. In addition, a consistency check is made with the Foreign Trade sales at product group level, namely for those trade activities that predominantly depend on imported goods.

Furthermore, following the same practice as in the case of trading activity observed in manufacturing, distributive trades include trade activities of non-commercial organisations only if these amount to a significant level.

Turning to the repair of household goods in NACE G, this is derived from the annual survey on the “Wholesale and Retail trade”. Validation checks are carried out every five years against household expenditure.

Use of additional sources

Underreporting can also be checked by means of comparing the findings of additional sources. The HBS is a good source for this purpose and can be used as a verification tool and in certain cases, such as in the Private Education (NACE 85.59.06), Private Health (NACEs 86.1 & 86.2), Other Service Activities (NACE 96.02) and activities of households as employers (NACE 97) where the relevant comparison showed the necessity for adjustments to cover the underreported output.

In addition, for NACE 93.19.2 (horse betting) expert estimate (Nicosia horse racing club) was used for the mis-reporting adjustment on the data from the economic survey. Finally, for NACE 69 (Legal and Accounting activities), underreporting adjustment is made on the basis of historical balanced data obtained from the SUT balancing framework on the relevant Intermediate Consumption for these CPAs.

VAT fraud

In the framework of the SUT balancing, a comparison between theoretical and actual VAT is performed. For more details see section 7.1.3 below.

f) Non-exhaustiveness type N7: Other statistical deficiencies

According to the guidelines, type N7 is in general associated with statistical deficiencies (non-response, production for own final use, tips, wages in kind, secondary activities). Under type N7, CYPSTAT made exhaustiveness adjustments for the production for own final use (NACE A), Tips (NACEs 49 and 55-56) and Wages & salaries in kind (all NACEs).

7.1.2 Adjustments made for different types of non-exhaustiveness

The following table provides an overview for output, intermediate consumption (IC), and gross value added (GVA) by non-exhaustiveness types and methods. As it can be seen, the methods with the most important share to the total exhaustiveness adjustments are the SUT balancing procedure findings, the HBS and ratios constructed from past surveys and the VAT fraud without complicity. Most of these adjustments are all classified under type N6, which is the most important non-exhaustiveness type.

Table 7.1.2: Overview Table linking the N-types to the exhaustiveness methods, 2017, € million

Non-exhaustiveness type		Component	Exhaustiveness methods								TOTAL	Share to Total
			Employment method	Illegal activities	Income in kind Tips	VAT fraud without complicity	HBS and ratios from past surveys	SUT Balancing Procedure findings	Ad-hoc surveys and expert estimates	Production for own final consumption		
N1	Rental of dwellings via online platforms	Output						48,7			48,7	4,1%
		IC						12,2			12,2	
		GVA						36,5			36,5	3,1%
	Education	Output						40,0			40,0	3,3%
		IC						14,6			14,6	
		GVA						25,4			25,4	2,1%
	Total N1	Output						88,7			88,7	7,4%
		IC						26,8			26,8	
		GVA						61,9			61,9	5,2%
N2	Narcotics	Output		44,1							44,1	3,7%
		IC		0,0							0,0	
		GVA		44,1							44,1	3,7%
	Prostitution	Output		50,2							50,2	4,2%
		IC		8,1							8,1	
		GVA		42,0							42,0	3,6%
	Total N2	Output		94,2							94,2	7,8%
		IC		8,1							8,1	
		GVA		86,1							86,1	7,3%
N3	Sports Fishing	Output						0,3			0,3	0,0%
		IC						0,1			0,1	
		GVA						0,2			0,2	0,0%
	Cottage Industry	Output						0,8			0,8	0,1%
		IC						0,2			0,2	
		GVA						0,6			0,6	0,0%
	Own Construction of households	Output								14,2	14,2	1,2%
		IC								4,1	4,1	
		GVA								10,1	10,1	0,9%
	Own Consumption (Hunting)	Output							14,9		14,9	1,2%
		IC							5,8		5,8	
		GVA							9,1		9,1	0,8%
	Total N3	Output						1,0	14,9	14,2	30,1	2,5%
		IC						0,3	5,8	4,1	10,2	
		GVA						0,8	9,1	10,1	19,9	1,7%
N5	Employment Reconciliation	Output	15,3								15,3	1,3%
		IC	2,3								2,3	
		GVA	13,0								13,0	1,1%
	Total N5	Output	15,3								15,3	1,3%
		IC	2,3								2,3	
		GVA	13,0								13,0	1,1%

Non-exhaustiveness type		Component	Exhaustiveness methods								TOTAL	Share to Total	
			Employment method	Illegal activities	Income in kind Tips	VAT fraud without complicity	HBS and ratios from past surveys	SUT Balancing Procedure findings	Ad-hoc surveys and expert estimates	Production for own final consumption			Own-account construction
N6	NACE I Food Service Activities	Output					32,9					32,9	2,7%
		IC					0,0					0,0	
		GVA					32,9					32,9	2,8%
	NACE M Legal Activities	Output						254,4				254,4	21,2%
		IC						0,0				0,0	
		GVA						254,4				254,4	21,5%
	NACE M Accounting, bookkeeping and auditing activities	Output						94,3				94,3	7,9%
		IC						0,0				0,0	
		GVA						94,3				94,3	8,0%
	NACE P Education	Output					49,4					49,4	4,1%
		IC					0,0					0,0	
		GVA					49,4					49,4	4,2%
	NACE Q Human Health	Output					76,3					76,3	6,4%
		IC					0,0					0,0	
		GVA					76,3					76,3	6,5%
	NACE R Betting activities Horse Race activities	Output							111,0			111,0	9,2%
		IC							0,0			0,0	
		GVA							111,0			111,0	9,4%
	NACE S Other service activities	Output					59,4					59,4	4,9%
		IC					0,0					0,0	
		GVA					59,4					59,4	5,0%
NACE T Activities of households as employers	Output					7,5					7,5	0,6%	
	IC					0,0					0,0		
	GVA					7,5					7,5	0,6%	
VAT Fraud	Output				190,2						190,2	15,8%	
	IC				0,0						0,0		
	GVA				190,2						190,2	16,1%	
Total N6	Output				190,2	225,6	348,7	111,0			875,5	72,9%	
	IC				0,0	0,0	0,0	0,0			0,0		
	GVA				190,2	225,6	348,7	111,0			875,5	74,1%	
N7	Tips Hotels & Restaurants	Output		42,7								42,7	3,6%
		IC		0,0								0,0	
		GVA		42,7								42,7	3,6%
	Tips Taxis	Output		2,9								2,9	0,2%
		IC		0,0								0,0	
		GVA		2,9								2,9	0,2%
	Own Consumption	Output							14,6			14,6	1,2%
		IC							7,2			7,2	
		GVA							7,3			7,3	0,6%
	Wages and Salaries in kind	Output			33,6							33,6	2,8%
		IC			-36,8							-36,8	
		GVA			70,4							70,4	6,0%
	Own Construction Agriculture	Output									3,0	3,0	0,3%
		IC									0,9	0,9	
		GVA									2,1	2,1	0,2%
Total N7	Output			79,2					14,6	3,0	96,8	8,1%	
	IC			-36,8					7,2	0,9	-28,6		
	GVA			115,9					7,3	2,1	125,4	10,6%	
Total	Output	15,3	94,2	79,2	190,2	225,6	437,4	112,0	29,5	17,2	1.200,6		
	IC	2,3	8,1	-36,8	0,0	0,0	26,8	0,3	13,0	5,0	18,7		
	GVA	13,0	86,1	115,9	190,2	225,6	410,6	111,8	16,4	12,2	1.181,9		
Share to total %	Output	1,3%	7,8%	6,6%	15,8%	18,8%	36,4%	9,3%	2,5%	1,4%	100%		
	GVA	1,1%	7,3%	9,8%	16,1%	19,1%	34,7%	9,5%	1,4%	1,0%	100%		

Exhaustiveness methods – impact on the three approaches

Most of the adjustments shown above have a counterpart record in the expenditure and income approaches, depending on the exhaustiveness method. This linking is presented in the following table:

Table 7.1.3: Exhaustiveness methods and impact by approach

Exhaustiveness methods - production approach	Components affected in the expenditure approach	Components affected in the income approach
Employment method (N5)	Household Final Consumption Expenditure	Gross Operating Surplus and Mixed Income
Illegal activities (N2)	Household Final Consumption Expenditure & Import of Services	Gross Operating Surplus and Mixed Income
Income in kind (N7)	Household Final Consumption Expenditure	Compensation of employees
Tips (N7)	-	Compensation of employees
VAT fraud without complicity (N6)	-	Gross Operating Surplus and Mixed Income
HBS and ratios constructed from past surveys (N6)	Household Final Consumption Expenditure	Compensation of employees & Gross Operating Surplus and Mixed Income
SUT Balancing Procedure findings (N1 & N6)	-	Gross Operating Surplus and Mixed Income
Ad-hoc surveys and expert estimates (N3 & N6)	Household Final Consumption Expenditure & Import of Services	Gross Operating Surplus and Mixed Income
Production for own final consumption (N3 & N7)	Household Final Consumption Expenditure	Gross Operating Surplus and Mixed Income
Own-account construction (N3 & N7)	Gross Fixed Capital Formation	Gross Operating Surplus and Mixed Income

7.1.3 Exhaustiveness methods

1. Employment method (N5)

In the framework of the employment reconciliation, wide-ranging comparisons are made between employment data from various sources. In particular, in 2015, the National Accounts division in cooperation with the Employment Statistics division of CYPSTAT worked on a joint employment reconciliation project that resulted in the revision of the Employment data series for the years 2005-2015.

Specifically, the following sources were utilised:

- The Cyprus Population Census of 2011, data of which was available in 2014.

- The Employment Survey of 2014-2015, the data of which was revised due to changes in the survey sample and weights.
- The Labour Force Survey (revised results for the years 2008-2014, following the Population Census 2011).
- Final administrative data from the Social Insurance Department up to 2013.
- Final revised employment data from the Annual Economic Surveys for the years 2008-2013 (published in 2015).

The results of the Population Census 2011 revealed that total population in Cyprus was underestimated due to increased migration flows. Thus, total population was revised upwards. As a result, household-based surveys like the Labor Force Survey, was also revised upwards for the years 2008-2014. In addition, the Employment Survey 2014, which is the basic survey for the compilation of employment, and the Annual economic surveys by economic activity, showed an increased level of employment due to an update in the population of enterprises included in the Business Register and other methodological changes. Consequently, the level of total employment was found to be underestimated.

In the employment reconciliation project administrative data from Social Security Records, was also used in combination with all other sources. As a result, the employment series was revised upwards, leading to an increase in Compensation of employees.

This significant revision in employment data was not reflected at the same extent to the production approach, since the main source of information for this approach are the annual economic surveys, the sample of which is based on the Business Register, which is regularly updated.

Nevertheless, an exhaustiveness adjustment is made for those units (entrepreneurs), which are not obliged to register and their employment was significantly revised. Namely, an adjustment was made for NACE 66.2 (Activities Auxiliary to Insurance and Pension Funding). Specifically, it concerned the activities of insurance agents and brokers who operate independently as freelancers. The following table illustrates the calculations and impact on the gross value added (€13,0 million).

Table 7.1.4: Employment reconciliation, 2017

1	Employment reconciliation: number of agents and brokers not registered	906
2	Monthly salary (ad-hoc survey) - €	1.200
3	Total salary of all agents and brokers (3)=(1)*(2)*12 months € million	13,0
4	Intermediate consumption (fuels, telephone, electricity etc.), € million	2,3
5	Output (5) = (3) + (4), € million	15,3

2. Illegal activities (N2)

The ESA 2010 provides that illegal activities fall within the production boundary of national accounts. In September 2014, CYSTAT incorporated the data on illegal activities following a Transversal Reservation. According to this Reservation, the sources and methods used need to be reviewed in order to ensure that illegal activities are properly included in the NA.

CYSTAT initiated special studies in 2009 that were concluded successfully in 2012. The studies covered the illegal activities of drugs, prostitution, and smuggling of alcohol and tobacco. The methodology applied is still valid and it was used for the estimation of year 2017. The final estimates and their impact to value added are synoptically shown in the summary Table below:

Table 7.1.5: Summary, exhaustiveness adjustments for illegal activities (N2), 2017

	€ million
Prostitution	42,0
Production and trafficking of drugs	44,1
Smuggling of Alcohol & Tobacco products	0,0
Total impact from all illegal activities	86,1

It should be noted that no adjustments were made for smuggling, since the smuggling activity of tobacco and alcohol products appears to be insignificant in Cyprus. In the course of the year 2017 the continued insignificance of the smuggling was examined again and it was proved to be negligible.

Analytical information on the data sources, the calculations and the impact on NA is shown in the Annex 7.I.

3. Income in kind and tips (N7)

a) Income in kind

Income in kind such as clothing, meals and other benefits that are made available by employers either free or at a reduced rate, is included in the data obtained from the annual economic surveys in the compensation of employees and thus excluded from the intermediate consumption.

The valuation of wages and salaries in kind varies and depends on the origin (i.e. whether they are produced or purchased by the employer). Normally the agricultural and manufacturing goods fall within the first category, whereas the rest in the second. In cases where there is evidence that wages and salaries in kind are provided at reduced prices, the amount paid by the employee is deducted and the net figure is recorded as wages in kind.

Nevertheless, economic surveys fail to record income in kind for company cars that are also used by employees for private use. The use of the company car comprises (a) the actual value of the car – imputed rental and (b) the fuels consumed, which are taken into account in the calculation of income in kind. The imputed rental is recorded under NACE 77.1 (Renting and leasing of motor vehicles), while the fuel consumed is deducted from the IC of all NACEs based on the information provided by the economic surveys for the value of fuels for transport.

Based on Transport Statistics, in 2017 there were 504.960 saloon cars, of which 26.890 were estimated to be company-registered passenger cars (information received from the Road and Transport Department).

(i) Actual value of the car – imputed rental

The company cars used for private use are, in effect, being treated as private final consumption expenditure and recorded in HFCE, hence the GFCF is not affected. The private use is an imputed rental from the company to the household (NACE 77). These are also included, as income in kind, in the expenditure and income approaches to GDP. The value for the imputed rental of the company cars is estimated at €33,6 million for 2017.

The calculation details are shown in the following table:

Table 7.1.6: Private use of company cars – Imputed rental, 2017

1	Average price of company-registered passenger car	€	12.506
2	Life assumption for motor vehicles	years	10
3 (=1/2)	Yearly imputed rental for a company-registered passenger car	€	1.251
4	Number of company-registered passenger cars on the road	number	26.890
5 (=3*4)	Value of payment in kind (imputed rental) for the private use of company cars	€ (000`s)	33.628

(ii) Fuels consumed

In order to calculate the benefit to the employees that were entitled to such payment in kind, a special ad-hoc survey was initially conducted in 2006 (and reviewed again in 2015 showing no significant changes), in the absence of official statistics. A variety of firms were approached and the managers were asked to give rough estimates on the private usage of the company's vehicles. Based on the answers the use was divided in three main categories: Travel to work, weekend use and daily use on free time.

The total distance privately travelled (in kilometres), including journeys to and from work, is estimated from this ad-hoc survey results. The annual figure per company car was 6.020 kilometres (2.300 for journeys to and from work, 1.000 for holiday use and 2.720 for private purposes).

The price of fuel per km is the annual rate used to compensate the government officers while travelling on duty (information obtained from the Government Treasury). In 2017, this rate was 28,4 eurocents per kilometre.

Based on the ad-hoc survey, an amount of the total costs (nearly 20%) was contributed by the employees for the use of a "company car", mainly for fuels especially for the holiday use.

This produces the following wage/salary adjustment to take into account the private use of company cars. The value for private use of the company cars (fuels) is estimated at €36,8 million for 2017.

Table 7.1.7: Private use of company cars - Fuels, 2017

1	Total distance travelled (private use) per company car	km	6.020
2	Cost per km	€	0,284
3 (=1*2)	Gross value of private use of company cars	€	1.708,57
4	Individual employee's contribution to total cost	%	20
5 (=3*4)	Amount paid by employee for the use of company car (fuel)	€	341,71
6 (=3-5)	Net value of private use of company car	€	1.366,85
7	Number of company-registered passenger cars on the road	number	26.890
8 (=6*7)	Value of payment in kind (fuels) for the private use of company cars	€ (000`s)	36.754

It should be noted that the imputed rental which corresponds to the private use of company cars (€33,6 million) and the payment in kind for their use (€36,8 million) are included in the calculations of the HFCE (€70,4 million in total).

b) Tips

Since the Output as obtained from the annual economic surveys does not include the tips received, exhaustiveness adjustments are made for two different cases, namely for hotel and restaurants (NACE I) and for transportation (NACE 49).

i) Hotels and Restaurants

Tips for the year 2017 were estimated at €42,7 million. The approach used to arrive at this estimate is the rounding-up of average consumer prices charged. CPI data referring to year 2017 was extracted for representative products/services offered under this NACE activity. Based on ad-hoc evidence, the total value charged for the most commonly used package of these products/services was estimated and the residual value to the most appropriate rounded-up value was taken to be the level of tip.

Table 7.1.8: Average Price charged for representative products/services, CPI data, 2017

Representative products/services	Average Price charged (Euro)
Meal in restaurant / tavern for one person	16,65
Drink at bar / pub / café	
One beer	2,67
One glass of whisky	4,52
One coffee	3,33
One small bottle of water	0,90
Hotel accommodation - two persons, one double room	114,08

Table 7.1.9: Estimation of Average Price charged for the most commonly used package of representative products / services, 2017

Most commonly used package	Average Price charged	Average Price rounded - up	Level of tip	Tip as a % of Price charged
	(1)	(2)	(3=2-1)	(4=3/1)
Meal in restaurant for two persons with drinks (i.e. 2 beers and 1 water)	39,54	40,00	0,46	1,2%
Drink at bar/pub/café for a company of 4 (i.e. 1 beer, 1 whisky, 2 coffees, 2 water)	15,65	17,00	1,35	8,6%
Hotel accommodation – two persons, one double room	114,08	not appl.		

In the case of hotel accommodation, the approach of rounding-up the average consumer prices is not applicable. Payment is frequently made electronically and by credit card. Therefore, the corresponding tips appear in the employer's economic accounts and, consequently, in the production statistics. Other cash tips relating to hotel accommodation are seen to be those left for room maintenance. These are estimated at €1,3 million with the proxy method shown below:

Table 7.1.10: Estimation of tips for room maintenance (hotel accommodation), 2017

	Arrivals of tourists (number)*	3.652.073
x	Ratio of tourists staying in hotels & similar accommodation*	72,1%
=	Tourists visits in hotels & similar accommodation (number)	2.633.145
x	Average amount of tip assumed to be left in the form of coins (€)	0,50
=	Tips for room maintenance (€)	1.316.573

*Tourism statistics, Cystat.

The figures relating to the tip as a percentage of the price charged were applied to the value of Output as it was obtained from the relevant Services survey. The breakdown of Output in terms of the several sources (accommodation, restaurants etc.) was estimated by utilizing data from a small sample of units. The table below shows the calculation of the level of tips for each analytical category where tips are relevant.

Table 7.1.11: Calculation of tips for Hotels and Restaurants, 2017 (€ million)

NACE Rev.2	Activities within NACE Section I where tips are relevant	Output (Services survey)	Tip as % of Output	Value of tips
55.1	Hotels incl. hotels with restaurant <i>of which:</i>	1.145,6	1,1%	12,2
	<i>Accommodation</i>	764,1	0,2%	1,3
	<i>Restaurants</i>	270,4	1,2%	3,2
	<i>Bars & Clubs within hotel</i>	89,4	8,6%	7,7
	<i>Other</i>	21,8	0,0%	0,0
56.101	Restaurants and Taverns	608,0	1,2%	7,3
56.30*	Bars, Pubs, Cafes, Night-Clubs etc.	270,0	8,6%	23,2
	Activities where tips are relevant	2.023,6	2,1%	42,7

* Excl. Cafeterias and confectioneries (sales only)

ii) Transport

The ad-hoc evidence indicates that tipping for Taxis services (NACE 49.321) was €2,9 million. From the ad-hoc survey it was discovered that only urban taxi drivers receive tips, since in the case of rural and intercity taxis the conditions are such that a tip is not customarily expected and, therefore, the level of tips should be considered as insignificant. Since these cash tips do not appear in the employer's administrative data and, consequently, in the production statistics, adjustments are made by the national accounts. In the case of other transport activities, there is very little or no tipping. Consequently, a supplementary estimate is not made in respect of these activities. Total tips are evenly distributed over wages/salaries and other income. It should be noted that the assumptions used were last reviewed in 2015.

Table 7.1.12: Total Annuals tips attributed to NACE 49.32.1, 2017

Output for Taxis (all categories) (EUR 000`s)	43.063
Output for Urban Taxis (NACE 49.32.1) (EUR 000`s)	39.428
Relative importance of Urban taxis in terms of Output	91,6%
Total number of licensed taxis (urban, rural, inter-urban)	2.000
Total number of licensed urban taxis	1.831
Average number of daily trips	13
Average earnings from tips per trip (EUR)	0,50
Working days per year	240
Total annual tips per taxi (EUR)	1.560
Total annual tips (NACE 49.32.1) (EUR 000`s)	2.856,6

A summary table for the tips in all NACE activities is presented below:

Table 7.1.13: Summary Table, Tips, 2017 (€ million)

Tips for Hotels and Restaurants	42,7
Tips for Taxis	2,9
Total Tips	45,6

No adjustment for tips is made for other services, such as hairdressers and beauty salons, since the N6 exhaustiveness adjustment (described below) implicitly includes the tips paid by households.

It should be noted that the total amount of tips for Hotels and Restaurants, for Taxis and for other services is already included in the HFCF, since in the HBS the households report the value of the service including any amounts paid for tipping.

4. VAT fraud

a) Non-collected VAT due to fraud without complicity (N6)

The VAT Gap is defined as the difference between the theoretical VAT liability and the actual receipts of VAT. Two components need to be measured in order to calculate the VAT Gap: the theoretical VAT tax liability according to the law (VTTL) and the amount of VAT actually assessed and collected (VAT). The two are then combined to estimate the % of VAT Gap as $1 - \text{VAT}/\text{VTTL}$. The estimated VAT Gap thus measures the gap between theoretical VAT and actual VAT.

In order to calculate theoretical VAT receipts, the first step is to identify all the transactions which are subject to non – deductible VAT. Final Household consumption is treated as wholly subject to non – deductible VAT. Other categories of uses must be broken down in order to determine a rate of non – deductibility. National accounts use the most highly disaggregated data available to evaluate

the non – deductible VAT components based on annual surveys and in some cases on individual questionnaires.

The second step is to apply the appropriate rate of VAT to each transaction constituting the VAT base as defined above. The VAT rates applied are those in force during the year for which the VAT base is being calculated and are according to the legislation and rules governing VAT. For all the product categories, VAT rates were collected on an analytical level (6- digit CPA 2008). Where necessary, these rates were weighted to be converted on a 3-digit level.

The most detailed possible consumption data was then used from Supply–Use tables and household budget survey. Supply and Use tables provided detailed information regarding the percentage of exemption for each of the activities involved (Intermediate Consumption and Gross Fixed Capital Formation split into Deductible and Non-Deductible). On the Non-Deductible portion, the calculated VAT rates were used to provide us with the estimates of theoretical VAT on these types of consumption. For years for which the Supply – Use Tables were not available, extrapolated shares of taxable investment by economic activity were used.

The discrepancy between theoretical VAT receipts and actual VAT receipts comprises four components, as set out in the Annex of the Commission’s decision on the treatment of VAT fraud:

1. Time differences between treasury data and national accounts data;
2. Ad-hoc cancellations by the tax authorities of certain VAT claims in cases of insolvency;
3. Evasion involving the buyers’ connivance (with complicity);
4. Evasion not involving the buyers’ connivance (without complicity)

In order to deal with the first component, National Accounts used from Government Finance Statistics division the VAT amounts receivable on an accrual basis. The second component was according to information from VAT service considered as negligible and difficult in practice to identify. Specifically, uncollected VAT because of insolvency is considered to be negligible since the number of enterprises that were bankrupt in 2017 was 92 out of a total 217.588 registered enterprises. This is an insignificant percentage (0,04%) of bankruptcy and therefore uncollected VAT because of insolvency is considered to be negligible.

The calculation of VAT fraud without complicity is achieved within the SUT balancing framework. Information on the branches of economic activity subject to VAT fraud and the relevant breakdown

was obtained from the VAT Service and utilised together with the technical assistant of an expert, within the framework of the project of developing an IT tool for SUT balancing.

The total VAT fraud without complicity is estimated at €190,2 million for 2017.

The following table presents VAT fraud without complicity by activity after balancing procedure taking into account quantitative and qualitative information received from VAT Department. Figures until 2017 are incorporated in NA data.

Table 7.1.14: VAT fraud without complicity by activity after balancing procedure (€ million)

YEAR →	2010	2011	2012	2013	2014	2015	2016	2017
NACE Rev. 2 ↓								
A	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
B	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
C	1,2	4,0	1,9	4,2	2,4	1,5	1,3	1,8
D	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
E	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
F	30,9	50,0	21,9	39,6	25,4	18,2	16,9	27,7
G	5,4	18,8	9,7	22,3	16,3	10,7	9,0	12,1
H	0,8	3,0	1,6	4,0	2,8	1,8	1,4	1,9
I	13,0	49,9	28,2	67,7	50,0	33,3	29,5	40,2
J	0,1	0,2	0,1	0,5	0,3	0,2	0,2	0,3
K	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
L	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
M	61,2	85,4	75,5	88,7	75,4	76,5	69,5	86,1
N	0,5	1,8	1,0	2,3	1,7	1,2	1,1	1,5
O	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P	8,6	6,6	5,7	10,8	9,1	7,2	9,0	2,5
Q	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
R	3,6	3,9	4,0	5,5	5,2	4,7	4,2	4,6
S	8,4	14,4	11,4	14,0	10,9	9,6	8,1	11,5
T	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
TOTAL	133,7	237,9	161,3	259,6	199,5	164,8	150,2	190,2

Theoretical VAT for the total economy is calculated during the balancing procedure. This is the outcome of the VAT fraud without complicity calculated at product level based on the use side (expenditure) of the products and the respective adjusted VAT rates, after removing the share of VAT fraud with complicity. The components that are taken into account to calculate the VAT fraud without complicity for each product (CPA 3-digit) are the Final Consumption, Intermediate Consumption (Non-Deductible) & Capital Formation (Non-Deductible). The allocation of VAT fraud without complicity by activity (NACE) is done using quantitative and qualitative information from

VAT Department regarding the share of each activity in VAT gap. Finally, based on the same quantitative and qualitative information from VAT Department and according to the adjustment made on VAT rates for calculating VAT fraud without complicity during balancing procedure, VAT fraud with complicity is calculated at product level and allocated to the various industries/activities.

It should be noted that the information provided from VAT department does not have any impact either on the total VAT calculated or the total VAT without complicity, since this information only provides the share of each activity to the total VAT gap and therefore only the breakdown to the activities is changed.

b) Missing Trader VAT fraud (MT VAT fraud)

National accounts cooperated closely with the Fraud and Investigation Unit of the Tax Dept and gathered detailed qualitative and quantitative information, in order to identify cases of MT VAT fraud and its significance in monetary terms. According to the audits and the data analysis conducted from the Tax Dept for the years 2010 to 2020, several cases of acquisition and carousel fraud were identified.

Acquisition VAT fraud, involved companies that acquired goods from other Member States and have not submitted the correct VAT declarations when compared against the respective entries of their suppliers in the VAT Information Exchange System (VIES).

Carousel VAT fraud involved companies that did not pay the VAT due in Cyprus, after importing goods and reselling them through a network of companies. The goods were finally exported to other Member States with the relevant VIES tables correctly submitted. Such cases were identified for the years 2014 to 2018. After the investigation carried out by the Tax Dept it was acknowledged that there were about four intermediary companies reselling the specific products, between the companies that acquired the goods and the companies that exported the goods. Those intermediaries declared correctly their profit margin from the resale of the specific products, which is estimated at around 3-5% on the value of the products. The first company (Missing Trader) was disappearing before returning the VAT due in Cyprus, while the last company claimed the VAT as an input tax deduction. The Missing Trader was selling the products without any profit margin or at a reduced price from the price of acquisition. The products identified to be involved in the carousel fraud were “mobile phones, tablets, laptops and game consoles”.

Since 2020, based on article 4 of law N.122(I)/20205 (Reverse Charge), the obligation to pay VAT for the purchase of “mobile phones, tablets, laptops and game consoles”, is transferred to the recipient of the goods. Therefore, carousel VAT fraud has disappeared for this group of products.

According to Tax Dept. findings, for the years 2010-2013 and 2019-2020, no cases of carousel fraud were detected. Also, during the investigation, the Tax Dept did not come across any significant cases of identity theft (hijack of VAT number).

In addition to the constant investigations and on-the-spot inspections, the Fraud and Investigation Unit of the Tax Dept performs ongoing tax audits, exploring all the available sources, specifically for detecting cases of acquisition and carousel VAT fraud. National accounts have ensured to be informed of any future significant cases discovered and will continue to have access to the detailed annual data of the Tax Dept audits.

After analyzing the detailed data obtained from the Tax Dept, the values estimated for acquisition fraud and carousel fraud for the years 2010-2020, are presented in the following tables:

Table 7.1.15: Missing Trader VAT Acquisitions and Carousel Fraud

MT VAT ACQUISITION FRAUD			MT VAT CAROUSEL FRAUD		
EAR	VALUE	GNI%	YEAR	VALUE	GNI%
2010	€ 0	0,000%	2010	€ 0	0,000%
2011	€ 0	0,000%	2011	€ 0	0,000%
2012	€ 0	0,000%	2012	€ 0	0,000%
2013	€ 109.197	0,001%	2013	€ 0	0,000%
2014	€ 3.931.254	0,023%	2014	€ 1.671.301	0,010%
2015	€ 2.844.085	0,016%	2015	€ 8.576.217	0,048%
2016	€ 1.198.639	0,007%	2016	€ 10.109.697	0,056%
2017	€ 1.695.796	0,009%	2017	€ 16.876.884	0,087%
2018	€ 2.322.017	0,011%	2018	€ 15.184.035	0,074%
2019	€ 2.736.541	0,013%	2019	€ 0	0,000%
2020	€ 3.082.053	0,015%	2020	€ 0	0,000%

Consultation was also obtained from the Foreign Trade Statistics department about the recording of imports and exports. Their data also go through many coverage checks using the available data and relevant information from the VAT Department. Especially large cases of imported and exported goods are thoroughly investigated. Moreover, in cases of non-response by providers of statistical information for intra-EU trade, Foreign Trade Statistics estimate the missing trade. Additionally, the fact that Cyprus is an island with no land borders and all imports and exports have to go through the

⁵[https://www.mof.gov.cy/mof/tax/taxdep.nsf/All/F08AC7348EBBD2D9C22585CF002C094B/\\$file/2020_1_12_2.pdf?OpenElement](https://www.mof.gov.cy/mof/tax/taxdep.nsf/All/F08AC7348EBBD2D9C22585CF002C094B/$file/2020_1_12_2.pdf?OpenElement)

airports and ports, increases considerably the difficulty for products to enter or leave the country undetected.

During the SUT balancing procedure at product level, the theoretical VAT is calculated based on Final Consumption Expenditure by households and Intermediate Consumption & Gross Fixed Capital Formation (non-deductible VAT) using the relevant VAT rates. Therefore, in the case of acquisition VAT fraud, this is part of the total VAT fraud that is calculated during the balancing procedure for the reason that the products are available to the local market and they are consumed either by households or enterprises (non-deductible). Thus, the theoretical VAT is calculated for those products during balancing procedure and consequently, the VAT gap (theoretical VAT minus actual received) includes the VAT fraud that is generated through acquisition.

Regarding carousel VAT fraud, this is also part of the calculated VAT fraud during balancing procedure. Despite the numerous transactions between the traders for those products, the products are recorded (as explained above) in imports and exports and therefore at the end, the theoretical VAT payable and receivable through the numerous transactions should sum to zero (for honest traders). However, in case of fraudster, the VAT amount is not actually collected from Tax Dept (because of the missing trader) and consequently this amount is missing from total amount of VAT received from Tax Dept. Since the VAT Gap is calculated as the theoretical VAT (calculated within SUT framework) minus the actual received from Tax Dept, it includes the VAT fraud generated from carousel (see example in Annex 1 of the Final Report of the GNI SG on Missing Trader VAT Fraud – 23-24 November 2020).

Considering all the information provided from Tax Dept, the computation of Foreign Trade Statistics and the calculation of theoretical VAT through balancing procedure, it is concluded that no adjustment is needed to Cyprus NA estimates due to MT VAT fraud. Moreover, the annual amounts of MT VAT fraud that are provided from Tax Dept for years 2010-2020 are below the 0.1% of Cyprus GNI and from 2019 onwards, according to Tax Dept audits, the carousel VAT fraud is eliminated as a result of the implementation of the new legislation (article 4 of law N.122(I)/2020).

5. Household Budget Survey and Ratios constructed from past surveys (N6)

Statistical officers of CYSTAT responsible for the economic surveys, cross-check the answers given to the related questions of the questionnaire and they make any necessary misreporting adjustment based on the specific ratios for each NACE activity (see table in section 7.1.1). Example of such adjustment is the Accommodation and Food Service Activities (NACE I).

After the inclusion of the misreporting adjustments in the relevant survey results, National Accounts cross-check these figures obtained from CYSTAT divisions with the Household Budget Survey (HBS), where relevant. In cases where the COICOP categories indicate an underreporting in the production approach, a relevant exhaustiveness adjustment is made. The HBS is considered as an exhaustive source for several items, since households declare their real expenditures, underreported from the side of production. Examples are the private tuitions (NACE P), the medical services (NACE Q), other service activities (NACE S) and activities of households as employers (NACE T).

NACE I (Accommodation and food service activities)

After the preliminary results of the Accommodation and food service activities survey are obtained, they are confronted with those from the Tourist Expenditure Survey. Additional sources for validation purposes in this context are the number of tourists, the hotel occupancy survey etc.

The necessity for the exhaustiveness adjustment to the gross output of NACE 56 is also evident from the fact that in the food service activities payments made are mainly cash payments, making it easy to hide turnover from the tax authorities.

In general, it can be said that the ratios used for the estimation of the concealed production as well as the corresponding labor cost were established after experience accumulated over the years and through the communication channels with people engaged in these activities. The analytical figures for the exhaustiveness adjustment for NACE 56 are shown in the table below.

Table 7.1.16: Supplementary estimates for concealed production in NACE 56, 2017 (€million)

	Baseline	Concealed	Adjustment	Total
<u>Restaurants and mobile food service activities (NACE 56.1)</u>				
Gross output	810,7	27,7	3,4%	838,4
Intermediate inputs	470,2	0,0		470,2
Value added	340,5	27,7		368,2
VA: compensation of employees	205,7	13,9		219,5
VA: mixed income	134,8	13,9		148,7
<u>Event catering and other food service activities (NACE 56.2)</u>				
Gross output	47,6	2,0	4,2%	49,6
Intermediate inputs	28,2	0,0		28,2
Value added	19,5	2,0		21,5
VA: compensation of employees	12,6	1,0		13,6
VA: mixed income	6,9	1,0		7,9
<u>Beverage serving activities (NACE 56.3)</u>				
Gross output	287,6	3,2	1,1%	290,8
Intermediate inputs	163,4	0,0		163,4
Value added	124,2	3,2		127,4
VA: compensation of employees	73,8	1,6		75,4
VA: mixed income	50,4	1,6		52,0
<u>Food Service Activities: Total (NACE 56)</u>				
Gross output	1.145,9	32,9	2,9%	1.178,8
- intermediate inputs	661,7	0,0		661,7
Value added	484,1	32,9	6,8%	517,1
VA: compensation of employees	292,1	16,5		308,6
VA: mixed income	192,0	16,5		208,5

It should be noted, regarding NACE 55 - Accommodation, that the data provided from these enterprises are considered to be of adequate quality. The majority of the collected data are extracted from financial statements and for that reason are considered reliable. In addition, it is much more difficult, almost impossible, to conceal payments in hotels than in cafes and restaurants. Extensive electronic payment in hotels (using credit cards) makes it very hard to hide turnover and, consequently, remuneration from the tax authorities. Therefore, no adjustments for misreporting are made.

NACE P (Education)

In NACE P (Private Education), adjustments are made in the National Accounts framework, in particular for underreporting of private tuition. From the comparison of the results of the HBS it was evident that significant misreporting occurred in the domain of after-school tuition. This activity is normally undertaken on a part-time basis by teachers who give private tuition at home. Since these

cash receipts do not appear in the administrative data and, consequently, in the production statistics, adjustments are made by the national accounts.

Based on the HBS, expenditure on private tuition (COICOP classification codes 10.1.1.1.06, 10.2.1.1.07 and 10.4.1.1.05) was €92,1 million, while the annual economic survey for Education indicates an amount of €42,7 million (NACE 85.59.6). Thus, an adjustment for misreporting is made, equal to €49,4 million, as shown in the table following.

Table 7.1.17: Adjustments for private tuition, Private Education, NACE 85, 2017 (€ million)

NACE Rev.2	Description of activity	Output	Intermediate consumption	Gross value added
85	adjustments due to underreporting	49,4	0,0	49,4

NACE Q (Human health and social work activities)

Exhaustiveness adjustments are made in NACE Q (Health), in particular for misreporting of revenue by private doctors, dentists and private hospitals (NACE 86.2). The necessity for the exhaustiveness adjustments to the gross output is also evident from the fact that in these activities a significant number of self-employed persons is engaged and the payments made are mainly cash payments, making it easy to hide turnover from the tax authorities.

Taking into account the above reasoning, the survey results are provided with an adjustment for concealed production equal to €9,9 million. These are established after experience accumulated over the years and through the communication channels with people engaged in these activities.

The corrected survey results are then confronted with expenditure on medical services from the HBS and an additional adjustment is made. Based on the HBS, expenditure on private doctors, dentists and hospitals (COICOP classification codes 06.2.1, 06.2.2 and 06.3.1) was €433,3 million, while the corrected annual economic survey for Health indicates an amount of €366,9 million (NACEs 86.1 and 86.2). Thus, an additional adjustment for underreporting is made, equal to €66,4 million, The results for NACE division 86 (market producers), can be summed up as follows:

Table 7.1.18: Adjustments for medical services, Health, NACE 86, 2017 (€ million)

NACE Rev.2	Description of activity	Output	Intermediate consumption	Gross value added
86	adjustment due to misreporting (survey correction)	9,9	0,0	9,9
	adjustment due to underreporting (NA adjustment)	66,4	0,0	66,4
	Total exhaustiveness adjustment	76,3	0,0	76,3

NACE S (Other Service Activities)

Adjustments are made in NACE S (Other Service Activities), for misreporting of revenue in (i) NACE 95 for repairs of computers and personal/or household goods and (ii) NACE 96 for hairdressers and beauty salons.

Similar to NACE Q, the necessity for the exhaustiveness adjustments to the gross output of these NACEs is also evident from the fact that in these activities a significant number of self-employed persons is engaged and the payments made are mainly cash payments, making it easy to hide turnover from the tax authorities.

Taking into account the above reasoning, the survey results are provided with an adjustment for concealed production equal to €1,0 million for NACE 95 and €11,0 million for NACE 96. These are established after experience accumulated over the years and through the communication channels with people engaged in these activities.

An additional adjustment is made for NACE 96, after comparing the corrected survey results with expenditure on hairdressing salons, barber shops and beauty salons, as reported by households. Based on the HBS, expenditure on these activities (COICOP classification codes 12.1.1.1.01, 12.1.1.1.01 and 12.1.1.1.03) was €167,4 million, while the corrected annual economic survey indicates an amount of €120,0 million (NACEs 96.02.1, 96.02.2, 96.02.3). Thus, an additional adjustment for misreporting is made, equal to €47,4 million. The results for NACE S can be summed up the table below:

Table 7.1.19: Adjustments for Other service activities, NACE S, 2017 (€ million)

NACE Rev.2	Description of activity	Output	Intermediate consumption	Gross value added
95	adjustment due to misreporting (survey correction)	1,0	0,0	1,0
96	adjustment due to misreporting (survey correction)	11,0	0,0	11,0
	adjustment due to underreporting (NA adjustment)	47,4	0,0	47,4
	Total misreporting adjustment	58,4	0,0	58,4
S	Total adjustments	59,4	0,0	59,4

NACE T (Activities of Households as Employers)

Based on the HBS, expenditure on domestic housemaids (COICOP classification code 05.6.2.1.02) was €166,0 million, while the annual economic survey for 2017 indicated an amount of €158,5 million (NACE T). Thus, an adjustment is made equal €7,5 million.

Table 7.1.20: Adjustments for domestic services, NACE T, 2017 (€ million)

NACE Rev.2	Description of activity	Output	Intermediate consumption	Gross value added
T	adjustments due to misreporting (NA adjustment)	7,5	0,0	7,5

6. SUT balancing procedure findings (N1 & N6)**a) Rental of dwellings via online platforms (N1)**

In January 2020 and following the findings of SUT balancing for the year 2016, it was proved that there is a significant activity via Airbnb and other platforms in Cyprus. CYSTAT, in order to estimate the revenue from rentals via online platforms (i.e. Airbnb), used data/info from online database www.airdna.co/. The data collected from the online database (AirDNA) referred to the following:

- Area/District
- Available Residencies by quarter and district
- Rental Activity (residencies days booked) by quarter and district
- Average Daily Rate (price) by district

Using the number of residencies and the days booked by quarter, the annual days booked of residencies by district/area are computed. By multiplying the total days booked by the Average Daily Rate (price), the estimated revenue (Output) by district/area is calculated. For the estimation of Intermediate Consumption, CYPSTAT uses a percentage rate of 25% of the revenue, after consultation (ad-hoc information) from accountants and auditors.

The calculations for estimating the Output, the Intermediate Consumption and the Value added for rentals via online platforms for year 2017 are presented below:

Table 7.1.21: Calculation of Output/Value Added of online platforms and impact on GNI

District	Area	Total days Booked (1)	Daily Rate € (2)	Output € million (3)=(1)*(2)	IC € million (4) =25%*(3)	Value Added € million (5)=(3)-(4)
Famagusta	Kapari	40.711	87,5	3,6	0,9	2,7
	Paralimni	3.432	59,2	0,2	0,1	0,2
	Penera	45.402	130,3	5,9	1,5	4,4
	Agia Napa	49.022	101,2	5,0	1,2	3,7
Larnaca	Oroklini	13.947	55,6	0,8	0,2	0,6
	Larnaca	65.805	50,1	3,3	0,8	2,5
	Perivolias	12.175	81,1	1,0	0,2	0,7
	Tersefanou	3.205	40,1	0,1	0,0	0,1
Limassol	Moutagiaka	2.780	77,5	0,2	0,1	0,2
	Germasogeia	32.441	72,9	2,4	0,6	1,8
	Mesa Geitonia	1.101	46,5	0,1	0,0	0,0
	Limassol	42.782	61,1	2,6	0,7	2,0
	Trachoni	394	45,6	0,0	0,0	0,0
	Pissouri	17.019	93,0	1,6	0,4	1,2
Paphos	Aphrodite Hills	11.312	264,3	3,0	0,7	2,2
	Yeroskipou	4.041	53,8	0,2	0,1	0,2
	Paphos	83.455	48,3	4,0	1,0	3,0
	Kissonerga	6.260	128,5	0,8	0,2	0,6
	Tala	6.609	71,1	0,5	0,1	0,4
	Pegeia	75.033	142,2	10,7	2,7	8,0
	P. Chrysochous	15.634	89,3	1,4	0,3	1,0
Nicosia	Nicosia	16.821	48,3	0,8	0,2	0,6
	Strovolos	6.491	54,7	0,4	0,1	0,3
	Aglantzia	1.508	50,1	0,1	0,0	0,1
	Ag Dometios	1.113	38,3	0,0	0,0	0,0
	Engomi	2.053	44,7	0,1	0,0	0,1
	Lakatamia	732	70,2	0,1	0,0	0,0
	Latsia	794	27,3	0,0	0,0	0,0
Total – online platforms		562.074	86,7	48,7	12,2	36,5

b) Underreporting for private education (N1)

After the SUT balancing procedure for the years 2010-2016, it became apparent that a further upward adjustment of Output of NACE P (education) was needed in order to cover some underground activities (N1), such as gymnastics and sport instruction (personal trainers), as well as dance and music instruction (i.e. private piano lessons). It should be noted that these instructors have indeed an important underground activity and they intentionally avoid registration mainly for tax and social security obligations.

The table below presents the balancing adjustment (implicit) made for the specific CPA activities. Given the importance and the pattern of this adjustment, CYSTAT decided as of 2017 onwards to transform this implicit balancing adjustment to an explicit exhaustiveness adjustment. The latter is calculated using the average ratio (years 2010-2016), resulting from the balancing adjustment made divided by the Output of NACE 85. This average rate is estimated at 10% of the total activity of Private Education.

In order to calculate the explicit exhaustiveness adjustment for private education for 2017, the total Output of NACE 85 – private sector (as obtained from the annual economic surveys) was multiplied by the 10% rate. The Intermediate Consumption was estimated based on the IC/Output ratio, obtained from the same annual economic surveys. The calculation of the explicit exhaustiveness adjustment for private education is as shown in the table below:

Table 7.1.22: Exhaustiveness adjustment for private education (N1), 2017

1	Output – NACE 85 from survey (<i>€ million</i>)	399,9
2	IC – NACE 85 from survey (<i>€ million</i>)	146,3
3 (=2/1)	Ratio IC/Output	36,6%
4 (=1*10%)	Output - exhaustiveness adjustment N1 (<i>€ million</i>)	40,0
5 (=4*3)	IC - exhaustiveness adjustment N1 (<i>€ million</i>)	14,6
6 (=4-5)	Value Added - exhaustiveness adjustment N1 (€ million)	25,4

c) Legal activities (NACE 69.1) & Accounting, bookkeeping and Auditing services (NACE 69.2)

For NACE M and more particularly NACE 69.1 (Legal activities) and NACE 69.2 (Accounting, Bookkeeping and Auditing activities), an under-reporting adjustment is made.

During the balancing procedure (before the introduction of the ESA 2010), within the framework of a project under a Eurostat grant (development of IT tool for SUT), it was revealed that the output obtained from the annual economic surveys was underestimated (supply side), while exports of

services for these activities (use side) was at a much higher level. The export of services were mainly related to the services provided to financial SPEs and since these companies are according to ESA 2010 classified in the domestic sector and not in the Rest of the World, the exports of services are considered as intermediate consumption.

This issue was thoroughly discussed and examined with the colleagues responsible for the economic survey, as well as the BoP compilers in the CBC. It was proved that data from BoP was more solid related to data from the economic surveys, since there is a high under-reporting in the latter from the part of lawyers and accountants.

In order to estimate the use side of these activities and particularly the intermediate consumption for 2017, SUT data for year 2016 are taken into consideration and namely the intermediate consumption of domestic production in CPAs 69.1 and 69.2. The ratio of the intermediate consumption obtained from SUT balancing 2016 and of the Output of the annual economic surveys of 2016 is applied to the Output of the economic surveys of 2017, calculating in that way the intermediate consumption for 2017.

Legal activities

For the case of NACE 69.1, the following sources are used for year 2017:

- i) expenditure on legal services by households of €28,3 million based on the HBS (COICOP classification code 12.7.1.1.01),
- ii) legal services as intermediate consumption, projected from the SUT balancing of 2016 (€532,1 million),
- iii) exports of legal services of €22,8 million, according to Balance of Payment statistics.

Table 7.1.23: Expenditure on Legal Services, 2017

		€ million
(i)	Household expenditure on legal services (HBS)	28,3
(ii)	Legal Services as Intermediate Consumption (all NACEs)	532,1
(iii)	Exports of legal Services	22,8
	Total Expenditure on Legal Services	583,2

The expenditure side items described above sum up to a total of €583,2 million, while the annual economic survey indicates an amount of only €328,8 million (NACE 69.1). Thus, an explicit exhaustiveness adjustment for misreporting is made, equal to €254,4 million.

Accounting, Bookkeeping and Auditing activities

For the case of NACE 69.2, the following sources are used for year 2017:

- i) Accounting, bookkeeping and auditing services as intermediate consumption, projected from the SUT balancing of 2016 (€491,0 million)
- ii) exports of accounting, bookkeeping and auditing services were €109,9 million, according to Balance of Payment statistics

Table 7.1.24: Expenditure on Accounting, Bookkeeping and Auditing Services, 2017

		€ million
(i)	Accounting Services as Intermediate Consumption (all NACEs)	491,0
(ii)	Exports of Accounting Services	109,9
	Total Expenditure on Accounting Services	600,9

The expenditure side items described above sum up to a total of €600,9 million, while the annual economic survey indicates an amount of €506,6 million (NACE 69.2). Thus, an explicit exhaustiveness adjustment for misreporting is made, equal to €94,3 million.

A summary of the adjustments is shown in the following table.

Table 7.1.25: Adjustments for legal and accounting services, NACE 69, 2017 (€ million)

NACE Rev.2	Output	Intermediate consumption	Gross value added
69.1	254,4	0,0	254,4
69.2	94,3	0,0	94,3
M	348,7	0,0	348,7

7. Ad-hoc surveys and expert estimates

a) Betting/Gambling activities & Horse racing club activities

In the process of the SUT framework it became apparent that NACE activities 92 (Betting and gambling) as well as 93.19.2 (activities of the race track) were under-reported and an explicit adjustment should be made to the Output.

Regarding the activities of the race track, CYSTAT communicated with the director of the Nicosia horse racing club and it was confirmed that for all recent years (incl. 2017) the underreporting was quite significant and it is estimated to be equal to the actual output declared in the economic surveys. As it concerns the activities of NACE 92, CYSTAT made several ad-hoc surveys and telephone contacts with betting agents and individuals and concluded that the adjustment for this NACE

activity for year 2017 should be smaller compared to 2010 (75% adjustment to the Output instead of 100%), since in 2017 there was a licensing of the online betting and gambling companies that resulted to less underreporting output for these activities.

Thus, the exhaustiveness adjustment is equal to the 75% of the Output of NACEs 92.00.1 (€119,1 million) and 92.00.3 (€2,1 million) and 100% of the Output of NACE 93.19.2 - Nicosia horse racing club (€20,1 million). The relevant adjustment is shown in the table below:

Table 7.1.26: Adjustments for underreporting, NACE R, 2017 (€ million)

NACE Rev.2	Description of activity	Output	Intermediate consumption	Gross value added
92	adjustments due to underreporting – Betting and gambling <i>75% of Output NACEs 92.00.1 and 92.00.3</i>	90,9	0,0	90,9
93	adjustments due to underreporting – Nicosia Horse race club <i>100% of Output NACE 93.19.2</i>	20,1	0,0	20,1
NACE R	Total adjustments due to misreporting	111,0	0,0	111,0

b) Cottage Industry & Sport fishing

Apart from the significant exhaustiveness adjustments to NACE R, expert estimates and ad-hoc surveys were used in order to estimate the value of the Cottage Industry production (NACE C - mainly hand-woven articles, potteries and baskets), and the Sport fishing (NACE A).

Until 2008, the Cottage industry production was included in the results of the economic surveys. Nevertheless, since the value of this activity was considered to be insignificant, it was decided to exclude it from the relevant survey. The last available data for 2008 showed an output of €1,0 million and a value added of €0,8 million.

NA staff contacted several craftsmen in rural Cyprus and weavers in the village of Lefkara, which is famous for its woven articles, and based on these estimates, concluded that the production was at a slight deterioration for year 2017. The output was estimated at €0,8 million and the value added of €0,6 million.

Sport fishing is also covered adequately by estimates made by CYSTAT on the basis of relevant information (number of fishing licenses, assumed number of 'working' days, assumed daily catch etc.) provided by the Department of Fisheries. The value added for 2017 was estimated at €0,2 million as it can be seen from the table below:

Table 7.1.27: Estimation of Output for Sport Fishing, 2017

Releases of trout	53.850
Catches ratio	85%
Trout caught (number)	45.773
Number of licenses	2.540
Per capita caught	18,02
Average weight of trout (kg)	0,4
Volume of trout caught (kg)	18.309
Price per kg (€)	14,00
Value of Gross Output (€)	256.326
Number of licenses	2.540
Price per license (€)	26
Intermediate consumption (€)	66.040
Gross value added (€)	190.286

8. Production for own final consumption

The production for own final consumption comprises mainly of agricultural and livestock products (NACE 01) and a relatively small amount of fishery goods (NACE 03). In the Agricultural sector, the production of agricultural products for own final consumption is adequately covered by the use of specific questions in the relevant survey questionnaire.

However, the so-called 'garden' or 'home production', i.e. the production of agricultural products by households, is only partly covered. The part that enters the market (through open-markets or supermarkets) is adequately recorded, but for the remaining part, which is destined for own consumption, only estimates could be made in the complete absence of relevant data. The proportion gathered for own consumption through the questionnaires is applied.

The valuation of agricultural production is normally affected by means of the quantity-price method for individual products. In the case of livestock production, data on quantities supplied to dairies and slaughterhouses is used since such purchasers or users are required to submit returns. Additional information is required for produce consumed by farmers' families. Factors are used to estimate these figures. This general method described above is always checked against the area and yield approach.

After evaluating the production for own final use, it is necessary to calculate the intermediate inputs that are used in the production process. For this purpose, it was decided that the relevant ratio of Value Added to output should be applied. The calculations and results are summarized in the following table:

Table 7.1.28: Summary Table, Final Own Consumption, 2017, € million

	Output	VA as % of Output	Value Added	Intermediate consumption
Agricultural products (N7)	5,3	57,3	3,0	2,3
Livestock products (N7)	4,7	37,4	1,8	3,0
Ancillary products (N7)	4,2	54,7	2,3	1,9
Hunting (N3)	14,9	61,2	9,1	5,8
Total for NACE 01	29,1		16,2	12,9
Fishing (N7)	0,4	64,6	0,2	0,1
Total for NACE 03	0,4		0,2	0,1
NACE A	29,5		16,4	13,0

9. Own-account construction

Household units are also involved in some cases in the own-construction of dwellings (N3). The work in question comprises construction work undertaken personally by the property owner and/or friends and relatives in the form of unpaid (voluntary work) third-party help. The estimation of the own-construction output was based on the information obtained from the questionnaires of the Building Permits Survey, in which there was an explicit reference for the cases where the house was built by the owner and its family.

The estimation includes both construction materials used (€4,1 million), recorded as intermediate consumption and the imputed labour cost (€10,1 million) that represents the gross value added. Consequently, output for 2017 is estimated at €14,2 million.

Apart from the own-account construction of dwellings by households, an exhaustiveness adjustment is made for own-account construction in Agriculture (N7). This is based on information from the Agricultural division of CYPSTAT. It includes both materials used (€0,9 million), recorded as intermediate consumption and the imputed labour cost (€2,1 million) that represents the gross value added. Consequently, output for 2017 is estimated at €3,0 million.

10. Use of fiscal audits

The use of the fiscal audits is currently used for qualitative information and for the VAT fraud allocation to economic activities.

Following an analysis of the fiscal audits data during 2019, CYPSTAT does not foresee to utilise fiscal audit results for any other exhaustiveness adjustments. This is mainly due to the fact that the results of fiscal audits are based on a biased sampling and not a random sampling, since the tax authorities select the units for their operational audit on a risk-based approach.

7.2 Allowances for exhaustiveness in the expenditure approach

As described in the section on the production approach, for many elements of exhaustiveness a demand and supply based approach is combined. As presented in the table in section 7.1.2, the exhaustiveness adjustments made in the production approach have a counterpart record in the expenditure approach (mainly HFCE).

In addition to the exhaustiveness adjustments origin from production approach, the following adjustments are made in the expenditure approach:

- **Illegal activities.** Apart from the local production, there is an import of services (prostitution) and import of goods (drugs) consumed by households. For more information see Annex 7.I.
- **Ad-hoc surveys and expert estimates.** An exhaustiveness adjustment is made for import of services and HFCE of €88,0 million concerning e-gambling. This adjustment is based on information from newspapers and articles from different media communications together with data about transactions on e-gambling through the “JCC payment system”.

An additional adjustment is made for HFCE regarding horse-racing and betting activities of €111,0 million, origin from local production. For more information, see section 7.1.3 above.

The exhaustiveness adjustments by expenditure component, comparable with the Process Table, are shown in the table below:

Table 7.2.1: Exhaustiveness adjustments by expenditure component, 2017, € million

Expenditure component	N1	N2	N3	N4	N5	N6	N7	TOTAL
Household Final Consumption Expenditure (HFCE)	0,0	139,1	14,9	0,0	15,3	199,0	84,9	453,3
Gross Fixed Capital Formation (GFCF)	0,0	0,0	14,2	0,0	0,0	0,0	3,0	17,2
Import of Services	0,0	44,9	0,0	0,0	0,0	88,0	0,0	132,9
TOTAL IMPACT ON GDP	0,0	94,2	29,1	0,0	15,3	111,0	88,0	337,6

7.3 Allowances for exhaustiveness in the income approach

Since CYSTAT does not produce independent estimate of GPD using the income approach, no additional exhaustiveness adjustments are made other than those in the production approach as presented in the table in section 7.1.2 above.

The exhaustiveness adjustments by income component (compensation of employees and Gross Operating Surplus and Mixed Income), are shown in the table below:

Table 7.3.1: Exhaustiveness adjustments by income component, 2017, € million

Income component	N1	N2	N3	N4	N5	N6	N7	TOTAL
Compensation of Employees	0,0	0,0	0,0	0,0	0,0	39,3	115,9	155,3
Gross Operating Surplus & Mixed Income	61,9	86,1	19,9	0,0	13,0	836,1	9,5	1026,6
TOTAL IMPACT ON GDP	61,9	86,1	19,9	0,0	13,0	875,5	125,4	1181,9

ANNEX 7.I

Methodological note on the illegal activities in National Accounts

INCLUSION OF ILLEGAL ACTIVITIES IN NATIONAL ACCOUNTS

The ESA 2010 provides that illegal activities fall within the production boundary of national accounts.

The Statistical Service of Cyprus initiated special studies in 2009 that were concluded successfully in 2012. The studies covered the illegal activities of drugs, prostitution and smuggling of alcohol and tobacco. The final findings were incorporated in the National Accounts of Cyprus by September 2014. By using the same methodology, estimates for illegal activities have produced by the National Accounts for the year 2017.

The final estimates for 2017 are synoptically shown in the Summary Table below:

SUMMARY TABLE: ILLEGAL ACTIVITIES, NATIONAL ACCOUNTS ESTIMATES, 2017 (In Euro)

FINAL IMPACT ON GDP/GNI	2017
Production and trafficking of drugs	44.076.850
Prostitution	42.030.280
Smuggling of Alcohol & Tobacco products	0
Total Impact from all illegal activities	86.107.130
Total Impact as % of GDP	0,4%
Total Impact as % of GNI	0,4%

The present note is structured in three parts, one for each illegal activity covered. The text for each part is supplemented with Tables with figures relevant for each activity separately.

PART ONE

PRODUCTION AND TRAFFICKING OF DRUGS

DATA SOURCES

From the Supply-side approach, the data that is available and utilized in the estimation process concerns administrative data from Police on Seizures on an annual basis for the period 1995 onwards, covering Cannabis, Cocaine, Heroin, Ecstasy, Amphetamines, Metamphetamines and Opio. Data on Seizures appears to be volatile, reflecting the variations in authorities' priorities according to resources but also the difference in the drug characteristics (harder and more expensive drugs are imported less frequently than softer and cheaper ones and in relatively greater quantities each time).

Valuable qualitative information is continuously provided by all major parties involved such as Police (DLEU-Drug Law Enforcement Unit), «KENTHEA» (the main anti-drug, non-governmental, non-profit organization) and the NMCD (National Monitoring Centre for Drugs - «ΕΚΤΠΝ»). The information covers mainly the Seizures Rates achieved, the Consumption trends, the Wholesale & Retail Prices, Trade Margins and Local Production.

From the Demand-side approach, the available data is extracted from the specialized sample survey conducted every three years by NMCD covering population aged 15-64. The reference years for which the survey was conducted were 2015 and 2018. The most useful information extracted from the survey for the estimation process is the percentage of the population that reported consumption of drugs (Cannabis, Cocaine, Heroin, Ecstasy, Amphetamines, LSD).

Except from the NMCD survey which is conducted every three years, all other data sources mentioned are available annually and there is no need for extrapolation. The extrapolation method used to calculate the estimates for the between years of the NMCD survey is explained below (Estimation Method).

Valuable qualitative information is also continuously provided by all major parties, covering consumption behaviour, patterns and trends.

ESTIMATION METHOD

Both approaches (Supply and Demand-side) are followed in the estimation process. The final National Accounts estimate relies heavily on the Demand-side for the years in which survey data exists (benchmark years). Both sides are considered to provide underestimated results for this particular activity. The Demand-side underestimation is due to the reluctance of some respondents (despite the survey techniques) to reveal their drug consumption behaviour, especially in the case of cannabis where a significant part of the consumption concerns local production indoors. The Supply-side is underestimated since it relies (apart from the quantities seized) on seizures rates, for which

the assumptions made depend on Police information that seem to overestimate the authorities' efficiency.

SUPPLY SIDE APPROACH

In order to overcome the weaknesses of data volatility and variations in quantities seized, the statistical method of moving averages is applied. This method reflects positive results by the smoother fluctuations that depict in a better way the supply of drugs. A 3-year moving average was initially applied for softer and cheaper drugs, whereas in the case of harder and more expensive drugs the 5-year moving average was applied. Eventually, a 4-year moving average was applied for all categories of drugs in order to have a homogeneous approach in the estimations.

Seizure rates are assumed to range from 5% to 40% according to Police information, depending on the successful attempts each year. The choice of rate (5%, 10%, 15%, 20%, 30% and 40%) is made after considering for each year the deviation of the level of quantity seized from the average level of quantity seized for the entire period covered (1995 onwards).

The estimated quantities supplied for each drug are used together with the retail prices observed for each drug in order to arrive at the Private Consumption level from the Supply-side ($\text{Expenditure} = \text{Quantity supplied/consumed} \times \text{average street price}$).

Based on qualitative information, no dilution/purity factor is assumed to apply. In addition, all quantities of cannabis seized in the form of plants are taken to be the result of local production indoors for own consumption with each plant assumed to equal to 120 grams of production. Specifically, information from the Drug Law Enforcement Unit indicates that there is some adulteration in cocaine. According to the information some retailers alter cocaine purity about 20%. After estimating the impact to GNI, it was found to be negligible.

Imports are calculated on the basis of the estimated quantities supplied for each drug and the average wholesale prices. The value of trade margins is calculated by multiplying the estimated quantities supplied for each drug with the difference between the average retail and wholesale price for each drug.

Gross Output is taken to be the sum of the value of Trade Margins and the value of local production (cannabis plants). Zero value for Intermediate Consumption is assumed. In the case of drug traffickers, intermediate consumption is due to transport costs and given the size of Cyprus this is considered as negligible. Concerning the producers of cannabis, information from the Drug Law Enforcement Unit indicates that intermediate consumption consists of electricity, water and fertilisers, which after detailed calculation was also proved to be negligible.

DEMAND SIDE APPROACH

Based on the survey results, the percentage of the population that reported consumption for each drug is multiplied by the population figure (aged 15-64) in the reference year to obtain an estimated number of the current users of each drug. This number is multiplied by the annual consumption per current user to get the Final Consumption Expenditure. The annual consumption per current user is estimated on the basis of expert views coming from major parties involved, concerning the user dose (in quantity terms) and the dose frequency (in weeks/months). The retail prices used are consistent with those used in the Supply-side.

In between the survey years (2015 and 2018), there is no other information in order to produce reliable estimates from the Demand-side. The number of applicants for therapy was tested as an index for the number of users but proved to be unreliable. Even the moving average series presents a continuous upward trend that is inconsistent even with the survey years. This inconsistency is explained by the fact that the applicants are continuously rising as a result of better communicating the benefits from the drug-treatment programs and the gradual inclusion in the society rather than the conviction.

SUPPLY VERSUS DEMAND

The results from the Supply-side are confronted with those from the Demand-side, for the benchmark years (2015 and 2018) and for each drug separately.

For cannabis, the Supply-side result is adopted because the Demand-side is considered to be more underestimated for the reason mentioned earlier (indoor production only). For the two cases of drugs which the Survey fails to capture (Metamphetamines, Opio), the Supply-side result is again adopted. For cocaine, ecstasy and amphetamines the demand side result is adopted. The final national accounts estimate for total Consumption of drugs is consequently higher than the two separate results coming from Supply and Demand-side.

In between the benchmark years as well as the years prior to 2015, the estimates for each drug are based on the supply-side results. The bridging between the benchmark years was achieved by adopting the growth rates and the fluctuations for each drug according to the consumption values that resulted from the Supply-side.

Having obtained the national accounts estimate for consumption, a simple division by the retail prices is made in order to obtain the final quantities of drugs. Multiplying with the wholesale prices, the national accounts estimate for imports is also obtained. The value of trade margins is calculated

by multiplying the final quantities with the difference between the retail and wholesale price for each drug. Local production value is taken from the Supply-side approach.

NATIONAL ACCOUNTS ESTIMATES

For the year 2017, Value Added from Production and Trafficking of drugs is estimated at € 44,1 million (Gross Output: € 44,1 million, Intermediate Consumption: € 0,0 million).

Private Household Consumption of drugs is estimated at € 87,5 million and Imports at € 43,4 million. Exports is taken to be zero, since it is believed to be either zero or negligible in the case of Cyprus, as no such information (either quantitative or qualitative) was found anywhere, in all the available data sources.

The overall impact from incorporating Production and Trafficking of drugs in the national accounts is thus € 44,1 million or 0,2% of GDP. The same amount is impacting GNI for 2017.

TABLE I: SUPPLY SIDE APPROACH - ESTIMATION OF CONSUMPTION, IMPORTS AND LOCAL PRODUCTION 2017.

Table 1.1 SUPPLY SIDE APPROACH - Quantities Seized 2017 (in grams or grams equivalent)

Drugs and form	2017
Cannabis (in Plants)	19.320
Cannabis (in grams)	150.552
Cannabis resin - hashish (in grams)	1.045
Cocaine	7.911
Amfetamine (in tablets)	80
Amfetamines (in grams)	3
Ecstasy (in tablets)	2.750
Ecstasy (in grams)	159
Metamphetamines (in grams)	956
Metamphetamines (in tablets)	0
Opio (in grams)	0
Heroin (in grams)	0
Heroin (in miligramms)	0
LSD (in tablets)	3
Total Quantities Seized	182.779

Table 1.2 SUPPLY SIDE APPROACH - Quantities Seized 2017 (in grams or grams equivalent, MOVING AVERAGE 4 years)

Drugs and form	2017
Cannabis (in Plants)	113.190
Cannabis (in grams)	187.453
Cannabis resin - hashish (in grams)	1.601
Cocaine	82.232
Amfetamine (in tablets)	20
Amfetamines (in grams)	151
Ecstasy (in tablets)	5.355
Ecstasy (in grams)	566
Metamphetamines (in grams)	929
Metamphetamines (in tablets)	9
Opio (in grams)	124
Heroin (in grams)	2
Heroin (in miligramms)	0
LSD (in tablets)	31
Total Quantities Seized	391.663

Table 1.3 SUPPLY SIDE APPROACH - Seizure rates 2017 (in percentage points)

Drugs and form	2017
Cannabis (in Plants)	20
Cannabis (in gramms)	20
Cannabis resin - hashish (in gramms)	5
Cocaine	30
Amfetamine (in tablets)	10
Amfetamines (in gramms)	40
Ecstasy (in tablets)	15
Ecstasy (in gramms)	20
Metamphetamines (in gramms)	20
Metamphetamines (in tablets)	20
Opio (in gramms)	5
Heroin (in gramms)	20
Heroin (in miligramms)	5
LSD (in tablets)	15

Table 1.4 SUPPLY SIDE APPROACH - Estimated Quantities Supplied 2017 (in gramms or gramms equivalent)

Drugs and form	2017
Cannabis (in Plants)	565.950
Cannabis (in gramms)	937.266
Cannabis resin - hashish (in gramms)	32.020
Cocaine	274.105
Amfetamine (in tablets)	200
Amfetamines (in gramms)	377
Ecstasy (in tablets)	35.697
Ecstasy (in gramms)	2.830
Metamphetamines (in gramms)	4.645
Metamphetamines (in tablets)	45
Opio (in gramms)	2.485
Heroin (in gramms)	11
Heroin (in miligramms)	2
LSD (in tablets)	207
Total Quantities Supplied	1.855.839

Table 1.5 SUPPLY SIDE APPROACH - Retail Prices 2017 (in Euro)

Drugs and form	2017
Cannabis (in Plants)	22
Cannabis (in gramms)	22
Cannabis resin - hashish (in gramms)	19
Cocaine	185
Amfetamine (in tablets)	129
Amfetamines (in gramms)	129
Ecstasy (in tablets)	13
Ecstasy (in gramms)	13
Metamphetamines (in gramms)	155
Metamphetamines (in tablets)	155
Opio (in gramms)	18
Heroin (in gramms)	87
Heroin (in miligramms)	95
LSD (in tablets)	15

Table 1.6 SUPPLY SIDE APPROACH - Wholesale Prices 2017 (in Euro)

Drugs and form	2017
Cannabis (in Plants)	0
Cannabis (in gramms)	8
Cannabis resin - hashish (in gramms)	6
Cocaine	110
Amfetamine (in tablets)	89
Amfetamines (in gramms)	89
Ecstasy (in tablets)	9
Ecstasy (in gramms)	9
Metamphetamines (in gramms)	47
Metamphetamines (in tablets)	47
Opio (in gramms)	8
Heroin (in gramms)	19
Heroin (in miligramms)	19
LSD (in tablets)	5

Table 1.7 SUPPLY SIDE APPROACH - Value of Consumption Expenditure 2017 (in Euro)

Drugs and form	2017
Cannabis (in Plants)	12.167.925
Cannabis (in gramms)	20.151.224
Cannabis resin - hashish (in gramms)	592.370
Cocaine	50.709.425
Amfetamine (in tablets)	25.720
Amfetamines (in gramms)	48.467
Ecstasy (in tablets)	446.208
Ecstasy (in gramms)	35.375
Metamphetamines (in gramms)	719.975
Metamphetamines (in tablets)	6.975
Opio (in gramms)	44.152
Heroin (in gramms)	980
Heroin (in miligramms)	143
LSD (in tablets)	3.192
Total Value of Consumption	84.952.132

Table 1.8 SUPPLY SIDE APPROACH - Value of Imports 2017 (in Euro)

Drugs and form	2017
Cannabis (in Plants)	0
Cannabis (in gramms)	7.263.813
Cannabis resin - hashish (in gramms)	191.269
Cocaine	30.108.721
Amfetamine (in tablets)	17.861
Amfetamines (in gramms)	33.658
Ecstasy (in tablets)	309.867
Ecstasy (in gramms)	24.566
Metamphetamines (in gramms)	219.992
Metamphetamines (in tablets)	2.131
Opio (in gramms)	20.642
Heroin (in gramms)	214
Heroin (in miligramms)	28
LSD (in tablets)	1.064
Total Value of Imports	38.193.827

Table 1.9 SUPPLY SIDE APPROACH - Value of Local Production Consumed 2017 (in Euro)

Drugs and form	2017
Cannabis (in Plants)	12.167.925

TABLE II: DEMAND SIDE APPROACH - ESTIMATION OF CONSUMPTION 2015 AND 2018

CURRENT CONSUMPTION OF NARCOTICS

	2015 Survey	Estimated	Annual	Total
	Current Users as	number of	Consumption	Final
	% of Population	Current Users	per Current User	Consumption
	(ages 15-64)	(ages 15-64)	(ages 15-64)	(ages 15-64)
	(1)	(2)	(3)	(4)=(2)*(3)
Cannabis	1,2	6.967	2.028	14.129.482
Ecstasy	0,2	1.161	1.680	1.950.816
Cocaine	0,1	581	9.360	5.434.416
Heroin	0,0	0	12.770	0
Amphetamines	0,1	581	25.667	14.902.144
LSD	0,0	0	576	0
	1,6	9.290	3.920	36.416.858

Calculation of Annual Consumption per Current User				Quantity Consumed
User Dose in Quantity	Dose Frequency	Retail Price of Narcotic in EURO	Annual per User Consumption in EURO	
(5)	(6)	(7)	(8)=(5)*(6)*(7)	(9)=(2)*(5)*(6)
1,5	52	26,00	2.028	543.442
8,0	12	17,50	1.680	111.475
2,0	52	90,00	9.360	60.382
12,5	12	85,13	12.770	0
18,0	12	118,83	25.667	125.410
3,0	12	16,00	576	0

Population (15-64)	580.600
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	2018 Survey	Estimated	Annual	Total
	Current Users as	number of	Consumption	Final
	% of Population	Current Users	per Current User	Consumption
	(ages 15-64)	(ages 15-64)	(ages 15-64)	(ages 15-64)
	(1)	(2)	(3)	(4)=(2)*(3)
Cannabis	2,2	13.059	2.067	26.993.366
Ecstasy	0,2	1.187	5.280	6.268.416
Cocaine	0,1	594	27.300	16.205.280
Heroin	0,0	0	12.880	0
Amphetamines	0,1	594	26.083	15.482.631
LSD	0,1	594	561	333.207
	2,7	16.027	4.073	65.282.901

Calculation of Annual Consumption per Current User				Quantity Consumed
User Dose in Quantity	Dose Frequency	Retail Price of Narcotic in EURO	Annual per User Consumption in EURO	
(5)	(6)	(7)	(8)=(5)*(6)*(7)	(9)=(2)*(5)*(6)
1,5	52	26,50	2.067	1.018.618
8,0	12	55,00	5.280	113.971
2,0	52	262,50	27.300	61.734
12,5	12	85,86	12.880	0
18,0	12	120,75	26.083	128.218
3,0	12	15,59	561	21.370

Population (15-64)	593.600
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TABLE III: SUPPLY Vs DEMAND SIDE APPROACH - ESTIMATION OF CONSUMPTION (years 2015 and 2018).

In Euro

	SUPPLY	DEMAND	Difference (DEM-SUP)	Nat. Accs estimate
	Year 2015	Year 2015	Year 2015	Year 2015
Cannabis	36.834.825	14.129.482	-22.705.343	36.834.825
Ecstasy	575.896	1.950.816	1.374.920	1.950.816
Cocaine	16.762.163	5.434.416	-11.327.747	5.434.416
Heroin	416.201	0	-416.201	416.201
Amphetamines	30.895	14.902.144	14.871.249	14.902.144
LSD	2.533	0	-2.533	2.533
Metamphetamines	510.000	0	-510.000	510.000
Opio	55.829	0	-55.829	55.829
	55.188.342	36.416.858	-18.771.484	60.106.765

	SUPPLY	DEMAND	Difference (DEM-SUP)	Nat. Accs estimate
	Year 2018	Year 2018	Year 2018	Year 2018
Cannabis	43.714.299	26.993.366	-16.720.933	43.714.299
Ecstasy	546.173	6.268.416	5.722.243	6.268.416
Cocaine	66.095.531	16.205.280	-49.890.251	16.205.280
Heroin	571	0	-571	571
Amphetamines	69.659	15.482.631	15.412.972	15.482.631
LSD	2.755	333.207	330.453	2.755
Metamphetamines	1.412.438	0	-1.412.438	1.412.438
Opio	266	0	-266	266
	111.841.691	65.282.901	-46.558.790	83.086.655

**TABLE IV: FINAL NATIONAL ACCOUNTS
ESTIMATES, 2017. In Euro**

FINAL IMPACT ON GDP	2017
<u>Production Account</u>	
<u>Production of Narcotics (NACE code A)</u>	
OUTPUT	12.167.925
INTERMEDIATE CONSUMPTION	0
VALUE ADDED	12.167.925
<u>Trading of Narcotics (NACE code G)</u>	
TRADE MARGINS	31.908.925
Total Impact from Production Account	44.076.850
<u>Expenditure Account</u>	
PRIVATE HH CONSUMPTION	87.542.537
IMPORTS	43.465.687
Total Impact from Production Account	44.076.850
Total Impact as % of GDP	0,2%

PART TWO
PROSTITUTION

DATA SOURCES

The data that is available and utilized in the estimation process is overwhelmingly relevant to the Supply-side approach. It concerns firstly information relevant to prostitution obtained from governmental departments such as the Police Force Anti-Trafficking Unit, the Civil Registry and Migration Department of the Ministry of Interior, the Department of Medical and Public Health Services, the Social Welfare Services Department and the Labour Department of the Ministry of Labour and Social Insurance. Secondly, additional and/or qualitative information is collected from other sources such as taxi drivers, advertisements in yellow pages, articles in newspapers including content on Police operations or convictions and internet websites. All the data sources are available annually.

All the above information, together with a number of working assumptions, enable the estimation of the number of prostitutes broken down by type of prostitution, the average number of contacts per prostitute per period and the average prices for the different prostitution types.

Depending on the socio-economic, technological and other developments that take place in the cultural environment through time, the types of prostitution observed in Cyprus are the following: 1. “Red light” prostitution, 2. Cabarets, 3. night clubs/bars, 4. Young students, 5. Housekeepers, 6. Massage/Sauna parlors, and 7. Escort agencies.

ESTIMATION METHOD

For each type of prostitution, Gross Output is calculated as the number of prostitutes multiplied by the number of contacts per prostitute and then multiplied by the price.

In the case of young students (type 4), the same calculation applies but the outcome is classified as Imports and not as Gross Output, since the students are considered as non-residents.

It should be noted that after gathering information from the relevant police department and from the press, it is assumed that the only non-resident prostitutes are foreign students. This information indicates that it is unlikely for tourists to be involved in prostitution. Other foreigners who engage in prostitution (employed in cabarets, bars etc) are obliged to get a valid permission for a year or more and thus they are considered as residents.

All prostitution services are assumed that they are consumed by households (Private Household Consumption = Gross Output + Imports).

Intermediate Consumption is estimated by exploiting data from Household Budget Survey (HBS) and National Accounts figures for Private Household Consumption, as well as working assumptions on

the number of prostitutes per establishment/household. Firstly, HBS data is extracted for selected expenditure categories (per household) that are relevant to the consumption of prostitutes in their working environment. For the years in between the benchmark years, HBS data was extrapolated on the basis of the National Accounts figures for these categories of Private Household Consumption for each reference year. In this way, the total average consumption expenditure made by prostitutes in their working environment is estimated. The result is basically the average cost per prostitution establishment/household and this is used to calculate the ratio Operating Expenses / Revenues (OE/Rev). For the calculation of this ratio, the value of Revenues from Prostitution services is divided by the number of establishments/households involved in the prostitution services (equals to the number of prostitutes for each type divided by the assumed number of prostitutes per establishment/household). The OE/Rev ratio obtained for each year is then applied to total Gross Output from Prostitution services to arrive at the total Intermediate Consumption for the activity and subsequently to Gross Value Added.

An amount equal to the one calculated for Intermediate Consumption is then deducted from Private Household Consumption, since it is considered that these expenditures were already included in PHC, captured through the relevant data sources.

All Gross Value Added estimated for Prostitution is considered as gross operating surplus.

Consumption by non-resident households (Exports) are believed to be negligible in the case of Cyprus, as no such information was found anywhere, in the above-mentioned data sources.

Furthermore, the purchase of prostitution services by resident households abroad (Imports) was deemed to be insignificant in Cyprus for the following reasons: a) Cypriots do not frequently travel to countries considered as prostitution destinations. b) Cyprus is an island and the travel cost (by plane) in order to purchase prostitution services is relatively high. Even if there was evidence of purchases of prostitution services by resident households abroad, any estimate in National Accounts would have no impact on GNI (increase in HFCE and increase in imports of services).

GNI is in theory affected by the amount equivalent to the prostitution services by students (imports), but in practice it is considered that this flow is very well captured by the BoP data sources and no additional adjustments are needed.

NATIONAL ACCOUNTS ESTIMATES

For the year 2017, Value Added from Prostitution is estimated at € 42,0 million (Gross Output: € 50,2 million, Intermediate Consumption: € 8,1 million).

Private Household Consumption of Prostitution services is estimated at € 51,6 million, but the ultimate impact after the corrective adjustment for not double counting the IC impact is € 43,5 million (=51,6-8,1). Imports of services for prostitution are estimated at € 1,4 million and Exports of services for prostitution are taken to be zero.

The overall impact from incorporating Prostitution in the National Accounts is thus € 42,0 million or 0,2% of GDP. The same amount is impacting GNI for 2017.

TABLE I : FINAL NATIONAL ACCOUNTS ESTIMATES FOR PROSTITUTION, 2017

Table 1.1 Revenues from Prostitution, 2017 (in Euro)

Prostitution types	2017
Traditional prostitution (red light)	16.068.000
Night clubs/ cabarets/ bars	1.984.600
Cabarets	166.600
Night clubs	1.272.600
Bars/Pubs	545.400
Students and housekeepers	3.521.970
Students	1.432.800
Housekeepers	2.089.170
Massage parlours	21.450.000
Escort agencies	8.568.000
TOTAL	51.592.570

Table 1.2 Calculation of ratio Operating Expenses to Revenues, 2017

	2017
1. Revenues from Prostitution (€)	51.592.570
2. Number of establishment/household involved	1.605
3. Average revenues per prostitution establishment/household (3 = 1 / 2) (€)	32.147
4. Average cost per prostitution establishment/household (€)	5.210
5. Operating Expenses to Earnings ratio for prostitution (5 = 4 / 3)	16,2%

A more detail description of the calculation of illegal prostitution services in Cyprus is presented below:

i) Traditional prostitution

The information regarding the estimated number of prostitutes for traditional prostitution is collected from the police. Additional information is obtained from advertisements in yellow pages. In order to estimate the output of traditional prostitution (Table 1), three additional elements are required; the number of contacts per prostitute per day, the number of active working days per year and the price of service. This information is mainly obtained from police officers that are involved with anti-prostitution operations, from clients who have visited prostitutes and several media advertisements. Evidence deriving from European countries' best practices outline that the information initially obtained from the police in relation to the number of active working days (260 days per year), was a good estimation.

Table 1

Traditional prostitution (Red light)					
Year	Estimated number of prostitutes	Estimated number of contacts per prostitute per day	Number of active working days	Average price of service	Annual Output from prostitution (€)
2017	515	2,0	260	60	16.068.000

ii) Cabarets, night clubs and bars/pubs prostitution

The output generated from this type of prostitution is separated into four sub-categories:

- Output from prostitution during working hours inside cabarets (*Table 2*).
- Output from prostitution beyond working hours outside cabarets (*Table 2*).
- Output from prostitution in night clubs (*Table 3*).
- Output from prostitution in bars/pubs (*Table 4*).

The number of valid permissions for artists (cabarets) and barmaids (night clubs, bars/pubs) was received by the Civil Registry and Migration Department and represents a strong indication for the magnitude of women employed in cabarets, night clubs and bars/pubs. For the estimation of the actual number of artists who are involved with 'night life' prostitution, a working assumption is made based on police information, frequent articles in local newspapers describing police operations or convictions related to prostitution and qualitative information obtained from social surveys related to prostitution; 80% of employed artists in cabarets are engaged to prostitution while working on the cabaret and 15% of those artists are prostituted upon a client's request outside cabarets, usually in hotel rooms or rented apartments. The remaining 5% is supposed to abstain from prostitution.

On the other hand, 30% of employed barmaids in night clubs and bars/pubs are estimated to engage to prostitution.

An additional working assumption is made regarding the number of active working days throughout the year. This information is verified by the police as 260 days per year in cabarets and 200 days in night clubs and bars/pubs. Evidence for the pricing of client services is verified from newspapers articles, police officers and clients.

Table 2

Cabarets					
Year	Number of artists involved with prostitution	Estimated number of contacts per prostitute per day	Number of active working days	Average price of service	Annual Output from prostitution (€)
Cabarets (Working Hours)					
2017	6	1	260	100	145.600
Cabarets (Non-Working Hours)					
2017	1	1	200	100	21.000
Cabarets (Total)					
2017					166.600

Table 3

Night clubs					
Year	Estimated number of prostitutes	Estimated number of contacts per prostitute per day	Number of active working days	Average price of service	Annual Output from prostitution (€)
2017	64	1	200	100	1.272.600

Table 4

Bars/Pubs					
Year	Estimated number of prostitutes	Estimated number of contacts per prostitute per day	Number of active working days	Average price of service	Annual Output from prostitution (€)
2017	27	1	200	100	545.400

iii) Students and housekeepers prostitution

For the measurement of prostitution activities from students (Table 5), the number of female students' permits was collected from the Civil Registry and Migration Department. A working assumption is formulated for the percentage of female student's prostitution, being approximately 15% of the total number of valid student permissions. This assumption, as well as the estimated average of contacts, is based on anecdotal evidence from police convictions and police officers. The information for the pricing of these services is verified from media advertisements e.g. newspapers, Internet, yellow pages and police statements.

Table 5

Students					
Year	Estimated number of prostitutes	Estimated number of contacts per prostitute per month	Number of active months	Average price of service	Annual Output from prostitution (€)
2017	239	10	12	50	1.432.800

Housekeepers' prostitution output (Table 6) is estimated similarly to the students. The figures for the housekeepers, who are authorized to work in Cyprus, are gathered from the Civil Registry and Migration Department. In addition, evidence from the Police show a relatively small percentage (around 2% of total valid permits) of housekeepers involved into systematic prostitution.

Table 6

Housekeepers					
Year	Estimated number of prostitutes	Estimated number of contacts per prostitute per month	Number of active months	Average price of service	Annual Output from prostitution (€)
2017	580	6	12	50	2.089.170

iv) Massage prostitution

The estimation for massage prostitution is presented in Table 7. Since, no evidence is available from the police archive or Business Register concerning the number of massage parlors (institutes), the estimated number of parlors is based on media advertisements for massage services. To provide evidence on this an investigation was undertaken in various editions of advertisement newspapers in regular intervals within a year. For the estimation of the number of prostitutes, an assumption that two women per parlor are engaged with erotic massage was used. This was based on anecdotal evidence from police officers and clients of massage parlors.

The number of daily contacts and active working days are verified from related service activities i.e. physiotherapists who hand out medical massage, tattoo artists etc. Finally, the average price per service was indicated by police officers, ranging from €60 up to €140, while supporting evidence came up on the Internet via exclusive articles (e.g. police operations) and specialized newspapers/magazines advertisements.

Table 7

Massage					
Year	Estimated number of prostitutes	Estimated number of contacts per prostitute per day	Number of active working days	Average price of service	Annual Output from prostitution (€)
2017	520	2,5	220	75	21.450.000

(v) Escort agencies prostitution

Several registered websites hosting escorts in Cyprus, along with information from newspapers supported the estimation of escort agencies prostitution output (Table 8). A rough estimation for the number of escort prostitutes as well as the number of contacts per month is carried out. It is assumed that the number of escorts involved with prostitution is twice bigger than the number of cases identified in newspapers and Internet galleries of escort companies. With regards to the average service price of escorting, some evidence came up after informally interviewing some occasional limousine drivers who have arranged transportation of escorts for special events (e.g. bachelor and single men/women parties). Due to spanned prices (€180- €300) of escort services obtained from these sources, an approximate price was used in the calculations of the economic impact of escort prostitution activities to GDP.

Table 8

Escort Agencies					
Year	Estimated number of prostitutes	Estimated number of contacts per prostitute per month	Number of active months	Average price of service	Annual Output from prostitution (Euro)
2017	340	10	12	210	8.568.000

PART THREE

SMUGGLING OF ALCOHOL AND TOBACCO PRODUCTS

DATA SOURCES

There is no data available from the Demand-side. The only relevant data that is available relates to Supply-side and concerns quantities of cigarettes seized from Customs as well as qualitative information on the nature and significance of smuggling. International media research information was also exploited in order to facilitate understanding of the Cyprus case and arrive at the required conclusions.

ESTIMATION METHOD

The absence of adequate information makes any estimation extremely difficult. The limited information available (quantitative and qualitative) suggests that the level of smuggling activity in tobacco and alcohol products in Cyprus is insignificant. The reasons explaining how this is plausible appear to be the following:

- a. There are no cross-border issues which could facilitate smuggling operations, since the entry points in the Republic are few and highly controlled given the specific circumstances prevailing. Seizure rates are believed to be very high according to qualitative information.
- b. The retail price of cigarettes in Cyprus is lower than the average price of the European countries; it is higher only compared to the retail price of cigarettes in some East European countries. Although research evidence shows that there is no strong correlation between high prices and high levels of smuggling, it is one factor that suggests smuggling activity of cigarettes could not be significantly profitable for the Cyprus case, not mentioning also the relatively small size of the Cyprus consumer population. Other factors that usually give birth to smuggling activities, such as corruption, public tolerance, informal distribution networks and organized crime, are seen traditionally to be irrelevant for this activity, playing a very weak role in Cyprus social life.
- c. The quantities of cigarettes seized by Customs are considered as very small. They range from some few thousands to few millions of cigarettes sticks. Although information on Trade margins is not available, it is clear that the possible impact to GDP is even smaller.
- d. Examining international media, it can be deduced that the smuggling activity of tobacco that is connected with Cyprus, concerns activity with the areas occupied by Turkish troops and that are not under the control of the Government of Cyprus.
- e. The attractiveness of alcohol as smuggling product is considerably lower to smugglers in relation to tobacco, given the fiscal revenue at risk and potential profit. Consequently, the

possible impact of smuggling alcoholic products in Cyprus should be considered even more negligible.

- f. SUT analysis does not provide any indication for the existence of significant smuggling in either tobacco or alcoholic products, suggesting that any negligible relevant amounts are covered indirectly and treated adequately in the SUT framework with the reconciliation procedure. The exhaustiveness adjustments made to HBS relevant data, before SUT balancing, are considered more than adequate for this purpose. This adjustment is based on independent expenditure estimates (other than HBS data) using published survey data on average consumption expenditure and population figures. The observed gap within the SUT framework between USE and SUPPLY side (before balancing) is seen to be within the acceptable level of discrepancy (under 5%).

NATIONAL ACCOUNTS ESTIMATES

Given the indications stemming from the limited data and information available, the smuggling activity of tobacco and alcohol products appears to be insignificant in Cyprus and any activity observed concerns mainly the occupied part of the Republic. Any estimates produced will be characterised by a great number of working assumptions and will lead anyway to negligible impact to GDP (less than 0,01%). Therefore, it is considered that no such estimates should be included in National Accounts, as exhaustiveness is achieved anyway in the SUT framework.

Although smuggling showed a small increase in the recent years, it is still considered to be insignificant mainly due to the fact that Cyprus is an island and thus smuggling is discouraged.

CHAPTER 8: THE TRANSITION FROM GDP TO GNI

8.0 Introduction

Table 8.0.1: Transition from GDP to GNI, 2017 (€ million)

Section	Transitional item	Credit (from RoW)	Debit (to RoW)	Net
	GROSS DOMESTIC PRODUCT (GDP)			20.245,3
8.1	Compensation of employees	75,6	102,8	-27,2
8.2	Taxes on production & imports paid to the Institutions of the EU	0,0	49,1	-49,1
8.3	Subsidies received from the Institutions of the EU	67,4	0,0	67,4
8.4.1	Interest	2.385,7	5.935,8	-3.550,1
8.4.2	Distributed income of corporations	18.675,1	12.527,7	6.147,4
8.4.3	Reinvested earnings on FDI	906,2	4.105,6	-3.199,4
8.4.4	Other Investment Income	67,4	51,0	16,4
	Total (Transitional items)	22.177,3	22.771,9	-594,6
	GROSS NATIONAL INCOME (GNI)			19.650,6

The implementation of new statistical standards in the field of National Accounts (NA) and external statistics, together with the need to enhance consistency and ensure data comparability between the two domains of statistics, have led to a deepening of cooperation (laid out in a Memorandum of Understanding) between the Central Bank of Cyprus (CBC), the Ministry of Finance (MoF) and the CYSTAT. More specifically, the cooperating authorities have agreed to the exchange of necessary statistical data and other relevant information to better perform their functions in the statistical field, under specific procedures set out in the Memorandum. In this context:

- Specific actions were initiated towards the development of a common, harmonised business registry, which is based on uniform concepts, definitions and classifications, as specified in the relevant standards and guidelines issued by the ECB, Eurostat and the IMF.
- A data transmission calendar for foreign trade statistics (FTS) as well as for Balance of Payments (BoP) analytical figures was agreed between the CBC and CYSTAT, taking into account the transmission deadlines of the ECB and Eurostat for the BoP and NA data.
- CYSTAT provides monthly data on receipts/payments from tourism/Cypriots travelling abroad as well as the number of tourist arrivals and departures derived from frontier surveys.

Moreover, it estimates data on the shipping sector on a quarterly basis, taking into consideration the results of both the semi-annual and the annual surveys conducted by the CBC on the ship-management and ship-owning sectors, respectively.

- The CBC provides i.i.p. data for the compilation of the “rest of the world” sector of the annual financial accounts, produced by CYSTAT.
- MoF provides data on government foreign borrowing, foreign grants, subscriptions to foreign organisations and deposits of Cypriot embassies/consulates abroad.

Apart from this formal data exchange agreement, a liaison team with representative of both authorities meets regularly to review consistency and discuss solutions to existing challenges.

The general principles laid down in the BPM6 on compensation of employees and property income are applied in the country’s Balance of Payments.

8.1 Compensation of employees

As from 2014, BoP compilers conduct a quarterly services survey and amongst others they collect data on compensation of employees on gross basis. As a result, no further adjustment is needed to be made by NA for the inclusion of social contributions and income tax. Entities report data under the Services Survey are instructed to record cross-border flows of compensation of employees on an accrual principle.

Concerning employee stock options, currently these are not included in the “compensation of employees” item since this category is insignificant for Cyprus.

Since the quarterly services survey has also some limitations (does not cover students and extraterritorial organizations), NA produce the necessary adjustments, in order to fulfil the requirements of ESA2010 and BPM6. BoP compilers incorporate also these adjustments in the external statistics in order the two datasets to be aligned.

Table 8.1.1: National Accounts adjustments, € million

YEAR 2017	Credit	Debit	Net
Compensation of employees as collected form BoP	27,8	27,6	0,2
Adjustments made by NA			
Estimation of wages of Cypriot students working abroad	23,2		23,2
Estimation of wages of foreign students working in Cyprus		62,3	-62,3
Wages of Cypriots work in the UK bases and in foreign embassies Cyprus	24,6		24,6
Wages of non-residents working in Cyprus' embassies abroad		12,9	-12,9
Total Compensation of Employees recorded in NA and BoP	75,6	102,8	-27,2

Estimation of wages of resident students working abroad

The source of information is the Education Survey which is conducted by CYPSTAT annually and provides information on the number of students by country. For the year 2017, NA made an ad-hoc survey to estimate the percentage of students working in Greece, UK and USA and these rates are used for all the years.

Table 8.1.2: Income of Cypriot student working abroad, 2017

Country	Number of students abroad	% of students working*	Number of students working	Annual wage per student (euro)	Total (€ million)
Greece	13.794	10	1.379	8.000	11,0
U.K.	9.461	10	946	12.000	11,4
Other	1.416	5	71	12.000	0,9
Total	24.671		2.396		23,2

* Assumption made by N.A.

Estimation of wages of non-residents students working in Cyprus

The methodology used is the same as in the case of Cypriot students working abroad and the number of foreign students is collected also from the Education survey. It is assumed that 50% of the of foreign students are working simultaneously with their studies (ad-hoc information collected from universities/colleges in Cyprus).

Table 8.1.3: Income of foreign students working in Cyprus, 2017

Number of foreign students	12.449
50 % working	6.225
Annual Income of foreign students (Euro)	10.000
Total (€ million)	62,3

Wages of residents working in the UK military bases and in foreign embassies in Cyprus

Compensation of residents that are employed in the UK military bases is €13,8 million for the year 2017 and it is collected from the administration office of the UK military bases.

The number of residents working in the foreign embassies in Cyprus is captured from the Employment Survey (conducted annually by CYSTAT). An assumption is made for the annual compensation of these employees which for the year 2017 is estimated at €18.000 and total compensation is €10,8 million.

Wages of non-residents work in Cyprus embassies abroad

Data is obtained from the Government Budget and for the year 2017 is estimated to €12,9 million.

8.2 Taxes on production and imports paid to the Institutions of the EU

Taxes on production and imports is applicable from the second quarter of 2004 onwards, after the accession of Cyprus to the EU. It includes the following taxes collected by national governments on behalf of the institutions of the EU: levies on imported agriculture products, monetary compensatory amounts levied on exports and imports, sugar production levies and the tax on isoglucose, co-responsibility taxes on milk and cereals; receipts from trade with third countries: customs duties levied on the bases of the Integrated Tariff of the EC (TARIC).

It also includes the banks' contribution to Single Resolution Fund which is recorded in the second quarter of the year and the for 2017 amounts to €18,9 million.

The source of data for taxes paid to EU Institutions is the Government Treasury. The data is provided monthly and states clearly the reference month the payment is made (accrual). The figures collected front the Government Treasury is net of the amount paid by EU to Cyprus as a fee for the collection of the Taxes. National Accounts add this fee in the amount recorded as Taxes paid to EU and at the same time incorporate it in the Government Revenue.

Furthermore, the data is provided on a detail form so the categories are clearly identified in order to secure the exclusion of GNI and VAT own resources which are recorded in current transfers (D76).

BoP data is fully consistent with the figures included in NA.

8.3 Subsidies granted by the Institutions of the EU

As for Taxes above, this category is applicable from the second quarter of 2004 onwards, after the accession of Cyprus to the EU. The source of data is the Cyprus Agricultural Payments Organization (CAPO), which provides CYPSTAT with analytical Tables regarding subsidies on products and production received from EU on cash basis. The transformation of data to accrual basis is done by the NA division since the data from CAPO is provided together with the reference year the payment is performed.

The same figures are also adopted by BoP compilers.

8.4 Cross-border property income

In the case of property income, the correct sectorisation of resident institutional units is of utmost importance.

Concerning the identification of institutional units, the general principles on institutional units (i.e. the centre of economic interest, decision-making autonomy, and complete set of accounts) are applied. SPEs and artificial subsidiaries are treated as follows:

- The statistical coverage of SPEs is in line with the conclusions of the Eurostat/ECB/OECD 2013 Task Force on head offices, holding companies and SPEs.
- Artificial subsidiaries, defined as entities which:
 - Are wholly owned by a parent corporation.
 - Lack the ability to act independently from their parent corporations and may be subject to restrictions on their ability to hold or transact assets held on their balance sheets.
 - Are treated as an integral part of the parent, i.e. not as a separate institutional unit and their accounts are consolidated with those of the parent, unless they are resident in an economic territory different from that of the parent.

Regarding sectorisation, there are no deviations from the sectorisation guidelines. The CBC and CYSTAT are cooperating closely to allocate units into institutional sectors for the compilation of external statistics and national accounts. In Cyprus, monetary authorities, other monetary financial institutions (MFIs), government, captive financial as well as non-financial SPEs (ship-owning companies) account for the majority of financial cross-border activity.

Captive financial institutions form part of a relatively important institutional sector in Cyprus. They are categorised under sector S127, which mainly consists of SPEs, as defined in the SNA 2008, BPM6 and BMD4. More precisely, a unit is considered as an SPE if it meets the criteria listed below:

- It is resident in an economy i.e. it is a formally registered and/or incorporated legal entity recognized as an institutional unit, with:
 - no or little employment up to maximum of three employees⁶
 - no or little physical presence and
 - no or little physical production in the host economy.
- It is directly or indirectly controlled by non-residents.
- It is established to obtain specific advantages provided by the host jurisdiction with an objective to:
 - grant its owner(s) access to capital markets or sophisticated financial services; and/or
 - isolate owner(s) from financial risks; and/or
 - reduce regulatory and tax burden; and/or
 - safeguard confidentiality of their transactions and owner(s).
- It transacts almost entirely with non-residents and a large part of their financial balance sheet typically consists of cross-border claims and liabilities.

8.4.1 Interest (D41)

Since interest is related to a number of instruments, there are a number of sources to collect such data. The sources used depend on the underlying instrument as well as the resident sector. More specifically:

⁶ Although the Task Force on SPEs, set up by the International Monetary Fund in 2016, decided to set the threshold for the number of employees to five, this upper limit is not representative in the case of Cyprus, since there is no legal provision for minimum employment in the CY law. Thus, the threshold for the said criterion is set to three employees.

- Interest on deposits and loans
 - For the interest payable/ receivable of the CBC, this is collected from its Accounting Department.
 - For the interest payable/ receivable of other MFIs, this is collected via a quarterly survey conducted by the CBC.
 - For interest payable/ receivable by the government, the sources are the Ministry of Finance as well as data received from Eurostat regarding EFSF.
 - For the remaining sectors (other than CBC, government and other MFIs), the sources to compile interest are from the EFS survey and financial statements (financial statements are used for SPEs companies (with exception of some very large SPEs which are covered by the EFS survey) and small investment firms (medium and large investment firms are covered by the EFS survey)).
 - For remaining sectors, there are certain cases where the interest rate is imputed. This happens when only the position of the financial asset/ liability is available while the relevant interest is not provided (for example, the use of mirror data to construct households loans and deposits abroad). In order to impute the interest rate, respective rates from the MIR statistics are used.

The table below shows the interest on deposits and loans by source (table is inclusive of FISIM – the correction for FISIM is shown below).

Table 8.4.1: Interest on loans and deposits by source, 2017 (€ million)

	CR	DR	Net
TOTAL	2.018,2	6.134,1	-4.116,0
EFS	135,2	531,0	-395,8
Financial Statements	1.236,9	5.015,1	-3.778,2
Imputations	51,5	22,5	29,0
Survey on interest for banks	585,5	411,2	174,3
Interest of the CBC	4,4	0,0	4,4
Data from Ministry of Finance	0,0	149,4	-149,4
EFSF data	4,6	4,9	-0,2

- Interest on debt securities
 - For the CBC, this is provided by the Financial Markets section of the CBC.
 - For interest payable of other MFIs, this is calculated based on the coupon rate, the outstanding amount prevailing at the end of the reference period and the non-resident percentage holding. As regards interest receivable, this is calculated on a security-by-security basis for direct and indirect holdings based on “Centralised Securities Database”

(CSDB) data and information collected through the monthly Security Holding Statistics” (SHS) survey of the CBC.

- For the Government, interest is calculated based on the coupon rate, the outstanding amount prevailing at the end of the reference period and the non-resident percentage holding.
- For interest receivable of the remaining sectors (other than CBC, government and other MFIs), the sources are:
 - the monthly SHS survey which obtains data from resident organisations in the financial and non-financial sectors. Interest is calculated on a security-by-security basis for direct and indirect holdings based on CSDB data.

In addition to the above, data from third party holdings (TPH) is used (i.e. data collected by other banks of the Eurosystem through their respective SHS. These data concern Cypriot residents who use a custodian in those countries). The data used from TPH concern only households.

- the EFS survey and financial statements (financial statements are used for SPEs companies (with exception of some very large SPEs which are covered by the EFS survey) and small investment firms (medium and large investment firms are covered by the EFS survey).

These two mainly relate to the FDI category and for 2017, the amounts were negligible.

- For interest payable, this is calculated based on the coupon rate, the outstanding amount prevailing at the end of the reference period and the non-resident percentage holding. The collection of the above data is done from the SEC issues.

The table below shows the interest receivable/ payable on debt securities:

Table 8.4.2: Interest on debt securities by source, 2017 (€ million)

	CR	DR	Net
SHS	394,4	0,0	394,4
Financial Statements	0,0	0,0	0,0
Calculation based on issues data	0,0	736,0	-736,0
TPH	2,4	0,0	2,4
EFS	0,1	0,0	0,1

It should be noted that for the calculation of cross border flows of accrued interest on debt securities, the debtor approach is used.

As regards interest on debt securities, this is not distinguished as to whether this was received from index-linked debt securities and non- index-linked ones.

- Interest rate swaps and forward rate agreements

The above are not included under interest since they concern derivatives and thus, they are recorded as derivatives transactions.

- Interest on financial leases

Financial leases and loans are treated the same and we do not distinguish between the two in our statistics.

- Other interest

Other interest, as defined in ESA 2010, is already included above (for example, interest on bank overdrafts is included in interest in loans and deposits).

All flows of interest for balance of payments purposes are recorded on an accrual basis. This is ensured either by construction of the source (i.e. financial statements, CSDB (for SHS and TPH), derivation based on the coupon rate, imputations) or through specific instructions (i.e. EFS (here, apart from the instructions, we ask for both, interest payable/receivable and actual interest paid/received so the reporters can distinguish the difference), Ministry of Finance, CBC)

It should be noted that interest is calculated before the deduction of any tax and, also, if and when this is applicable, interest will be including of grants for interest relief. The above are ensured either by construction of the source or through specific instructions to respondents.

The correction to interest received from and paid to the rest of the world is made to offset the FISIM effect on trade.

Table 8.4.3: Adjustments made on D41 for FISIM purposes, 2017 (€ million)

	CR	DR	Net
TOTAL	-29,4	-934,3	904,9
S11	12,8	-167,0	179,8
S13	0	12,5	-12,5
S14	31,8	1,2	30,6
S122	-80	27,3	-107,3
S124	1	-6,3	7,3
S125	9,2	-27,0	36,2
S126	-3,6	0,3	-3,9
S127	-1,8	-775,4	773,6
S128	1,2	0,0	1,2

Concerning interest on Intra-Eurosystem ("technical") asset/liability, when Cyprus has an asset, the associated interest is recorded as D.41 interest received from the rest of the world while in the case

of a liability, the associated interest flows are recorded as D.41 interest paid to the rest of the world. The D.41 interest received/paid from/to the rest of world is modelled based on the stock of the Intra-Eurosystem (“technical”) assets and liabilities. The “reference rate” used to calculate the associated D.41 interest flow is the ECB’s deposits reference rate (when the reference rate is negative, an assumption that this is zero is made).

8.4.2 Distributed income of corporations

8.4.2.1 Dividends (D421)

Dividends are related with foreign direct investments (FDI) and portfolio investments.

As regards **dividends resulting from FDI**, these are collected through:

- the External Financial Statistics (EFS) survey. The EFS is a quarterly survey although for small companies (i.e. companies with COPC less than 1m and positions less than 10m), this run on an annual frequency.
- Annual financial statements. Data from financial statements are collected with a time lag and incorporated in CY external statistics nine months after the end of the reference year. It should be noted that financial statements are used for SPEs companies (with exception of some very large SPEs which are covered by the EFS survey) and small investment firms (medium and large investment firms are covered by the EFS survey).

Regarding **dividends on portfolio investments**:

- For the credit side, data are collected from the CBC’s monthly SHS survey which obtains data from resident organisations in the financial and non-financial sectors. Dividends are calculated on a security-by-security basis for direct and indirect holdings based on CSDB data. Dividends received by the CBC are included here as well.
In addition, we use data from third party holdings (TPH) (i.e. data collected by other banks of the Eurosystem through their respective SHS. These data concern Cypriot residents who use a custodian in those countries). The data used from TPH concern only households.
- For the debit side are collected through the EFS survey and financial statements for certain SPEs.

As shown in the table below, the vast majority of dividends is recorded for the FDI category. The most important sources (in terms of dividends value) are the EFS survey and the annual financial statements of SPEs.

Table 8.4.4: Dividends by source and functional category, 2017

Euro million	Credit	Debit	Net
FDI	18.537,0	12.372,6	6.164,4
EFS survey	8.532,0	8.895,2	-363,1
Financial statements (SPEs)	10.003,4	3.469,8	6.533,5
Financial statements (small investment firms)	1,6	7,6	-6,0
Portfolio investment	118,2	52,4	65,8
SHS	112,7	0,0	112,7
TPH	5,5	0,0	5,5
EFS survey	0,0	1,5	-1,5
Annual financial statements	0,0	50,9	-50,9

Dividends are recorded at the time they are declared payable for all the sources used. As regards data from the SHS (combined with CSDB), this is already embedded in that. Regarding financial statements, the information of the time that dividends were declared is included in them. Finally, for data collected from the EFS survey, there are specific instructions to the reporting entities to record the dividends at the time they were declared. Apart from the instructions, we require the companies to give us both, “dividends declared” and “dividends paid” so to ensure that we record the correct value of dividends.

In line with BPM6, super-dividends are recorded as equity withdrawals instead of income. In practical terms, super-dividends are defined as disproportionately large exceptional payments of profits relative to the recent level of dividends and earnings. In such cases, the CBC directly contacts reporting entities for confirmation.

It should be noted that no adjustments for dividends are made to exports and imports due to valuation of intra-group transactions within MNEs (transfer pricing), as this is not found to be relevant for the case of Cyprus.

Withdrawals from the income of quasi-corporations (D422)

Cross-border flows of withdrawals from the income of quasi-corporations concern the FDI functional category. Data on the withdrawals from the income of quasi-corporations are collected through:

- The EFS survey. This concerns resident entities having quasi corporations abroad and quasi corporations in Cyprus which belong to a non resident.

Based on the instructions issued to reporting entities, withdrawals from the income of quasi-corporations are reported gross of any withholding taxes and they are recorded when receipt or payment occurs.

- Financial statements. Although this is a potential source, the corresponding data collected from financial statements from financial statements was zero in 2017. This is probably due to the entities which are covered by financial statements which are not expected to be or own a quasi-corporation.
- Estimations relating to the net operating surplus received by residents as owners of land and buildings (more on this below).

As is evident from the below table, the majority of this item comes from the EFS survey except for the net operating surplus received by residents as owners of land and buildings abroad and non-residents as owners of land and buildings on the economic territory. For the latter estimates are produced by National Accounts section as follows:

Net operating surplus received by non-residents for the production of dwelling services in Cyprus (debit):

Estimates on Income paid to non-residents for the production of dwelling services (imputed and actual) are made by NA and are incorporated in BoP statistics as well.

The CBC is the main data source for dwelling stock for non-residents owning real estate in Cyprus. The data is available from 2002 and onwards therefore NA extrapolated the series back to 1999. Back-casting data for the years prior 1999 was considered unnecessary, since the amount spent by non-residents for real estate in Cyprus was negligible. Actual rentals paid non-residents are available from the Central Bank of Cyprus and NA produces estimates for imputed rentals and the procedure is as follows:

The Construction Survey provides information regarding the construction of houses and apartments (total area in square meters) along with the cost per square meter. Using this information, the total cost for construction of both houses and apartments is calculated. The Construction Survey also provides the number of houses and apartments built per year which is used to calculate the average cost of construction. An average cost for the land is then added on the average cost of construction in order to obtain the total cost of dwellings. The average cost for the land is estimated by assuming a percentage on the cost of construction. It is noted that this percentage differentiates between years and in particular it exhibits an increasing trend since the cost of land is known to have increased significantly in a higher pace than the cost of construction.

Finally, the annual investment in dwellings by non-residents (source: CBC) is divided with the total cost of a dwelling (as described above) in order to come up with number of dwelling bought in each year by non-residents. By multiplying with an average actual rent and assuming that these dwellings

are used by their owners on average 2 months per year an estimate for imputed income paid to non-residents owners of dwellings in Cyprus is obtained.

From the Output estimated above is afterwards deducted the intermediate consumption and depreciation in order to come up with the Net Operating Surplus. Intermediate Consumption is estimated using the ratio Output/IC from the Dwelling Services (see chapter 3) and depreciation is calculated using the ratio of number of holiday homes in Cyprus by the total number dwellings and multiplied by the total depreciation of the Total economy (Housing) as calculated by the PIM model.

Net operating surplus received from residents for the production of dwelling services abroad (credit):

Estimates on Income received from residents for the production of dwelling services abroad (imputed and actual) are made by National Accounts and are incorporated in BoP statistics as well.

Similarly, to the case of non-residents, the CBC is the main data source for dwelling stock for residents owning real estate abroad. The data is available from 2002 and onwards therefore NA extrapolated the series back to 1999 since data prior this year were considered insignificant. NA section has to produce estimates for imputed rentals and the procedure is as follows:

An assumption was made regarding the main countries in which Cypriots have an interest to invest in the property sector, namely UK and Greece. The respective percentage of investment was assumed to be 70% and 30% respectively. CBC provided data concerning stock of dwellings' value per year of residents abroad. This value was then used to calculate the UK and Greece proportion of stock per year based on the aforementioned percentages. Data from the Office for National Statistics and the Bank of Greece (Average house prices) was then used to calculate the number of UK and Greek dwelling stock (annual increase of stock divided by average dwelling price). Data on average monthly rentals was obtained by the same sources to finally estimate the annual dwelling services. It is noted that an assumption was made regarding the period on which the annual dwelling services were calculated; in particular, 10 out of 12 months were assumed to be producing services.

Intermediate Consumption is estimated also using the using the ratio Output/IC from the Dwelling Services (see chapter 3) and depreciation is calculated using an assumption that the lifetime of the dwelling is 75 years.

Table 8.4.5: Withdrawals from the income of quasi-corporations by source and functional category, 2017 (€ million)

	Credit	Debit	Net
FDI	19,8	102,7	-82,9
EFS survey	8,9	99,9	-91,0
Net operating surplus received by residents and non-residents as owners of land and buildings	10,9	2,8	8,1

8.4.3 Reinvested earnings (RIE) of foreign direct investment (FDI) (D43)

RIE are the earnings of subsidiaries and associates that are not distributed as dividends to direct investors, and earnings of branches and other unincorporated enterprises that are not remitted to direct investors. They are measured on the basis of current operating performance, i.e. they represent undistributed income from normal operations of an enterprise and do not include any realised or unrealised holding (capital and exchange) gains or losses arising from valuation changes and write-offs (see more on this subject below).

For balance of payments purposes, a foreign direct investment is considered to occur through the establishment of a foreign branch or when an investor resident in one country acquires directly or indirectly 10% or more of the equity capital (shares) of an enterprise in another country. The investor is then designated as “direct investor” and the enterprise is referred to as “direct investment enterprise”. The direct investor and the direct investment enterprise are said to be in a direct investment relationship with each other and therefore belonging to the same group, for statistical purposes.

As mentioned above, the direct investment relationship extends to the case whereby an investor resident in one country indirectly owns an enterprise in another country, through the direct participation of its subsidiaries or associates in the equity capital of the enterprise, by more than 50%. Thus, the above gives an exception to the minimum 10% rule of direct equity participation, as, even though, an investor in one country directly owns less than 10% of the equity capital of an enterprise in another country, that direct investor can control the direct investment enterprise through its subsidiaries which are direct investors in the specific direct investment enterprise.

It should be mentioned that direct investment involves both the initial equity transaction between the direct investor and the direct investment enterprise- i.e. the transaction which establishes the direct investment relationship - and all subsequent transactions between them.

Collection and compilation of RIE

The CBC is the organisation in charge of collecting and compiling RIE. It should be noted that RIE are recorded at the time they are earned.

The collection sources of RIE (for both, inward and outward RIE) are either directly from reporting entities through the quarterly EFS survey or from annual financial statements. As explained above, financial statements are used for SPEs (with exception of some very large SPEs which are covered by the EFS survey) and small investment firms (medium and large investment firms are covered by the EFS survey). The table below shows the RIE for 2017 by collection source.

Table 8.4.6: Reinvested earnings by source, 2017

Euro million	Credit	Debit	Net
FDI	906,2	4.105,6	-3.199,4
EFS survey	419,3	585,5	-166,2
Financial Statements	486,9	3.520,1	-3.033,2

As evident from above, no matter which of the two sources is used, the compilation of RIE is based on the individual enterprise data.

The methodology to estimate RIE is followed for both sources (i.e. starting from net operating surplus as well as excluding holding gains and losses and other extraordinary items that do not fall under the Current Operating Performance Concept (COPC)). In the case of the EFS survey, specific instructions are circulated to the reporting entities on how to report profit/loss based on COPC. In order to ensure this, the survey asks for both, the accounting profit/loss and also profit/loss based on the COPC concept. The reporting entities are reporting the two figures for each entity with which they have a direct relationship (either inward or outward). When these two figures reported by the reporting entity are the same, this would alarm us and combined with other criteria (for example, if the enterprise is an investment firm holding listed equity), we would contact the said entity to clarify this. Also, in cases the COPC is too high in absolute value (i.e. either large positive number or a high negative number), we would contact the firm to clarify this as the firm may have included holding gains/ losses in the COPC.

As regards the other source, financial statements, the correct methodology is followed as the profit and loss of the said entity is available and we make the necessary adjustments.

In addition, care is given in order to identify and include the values of their indirect links in their reporting. More specifically, each entity in an ownership chain should determine its immediate counterparts up or down its own position in the chain on the basis of the existence of a direct

investment relationship (direct ownership of 10% or more). See section below for the identification of indirect links.

Based on the above, once a direct investor owns directly at least 10% of a direct investment enterprise, certain other enterprises in which that direct investment enterprise owns directly more than 50% (i.e. indirectly owned enterprises) are also regarded as direct investment enterprises and considered as group (related) enterprises to the direct investor and should be considered for the RIE compilation. Specific instructions on the identification of indirect links and reporting of RIE for those entities are circulated to the participating companies to the EFS. It should also be noted that fellow enterprises are also considered to be in a direct investment relationship with each other (although fellow enterprises do not have RIE with each other).

Transversal Reservation IV on Reinvested earnings on FDI

According to the statistical manuals, Research and Development (R&D) must be treated as an investment. This would mean that R&D shouldn't be expended through the "Profit and Loss" (P&L) but should be treated as an asset (or, in other words, it should be capitalised). In turn, this would imply that a consumption of fixed capital (CFC) should be applied to that asset for future periods.

The accounting standards and the statistical standards differ on the treatment of R&D (given that in Cyprus, the IAS/IFRS accounting standard is followed, all the analysis will be based on that accounting standard). In particular, IAS 38 states that:

1. If R&D is purchased from third parties, then this is capitalised.
2. If R&D is developed in-house, then it can either be capitalised or expended through P&L, based on some criteria.

The discrepancy between the statistical and the accounting treatment stems only for certain cases on the second point above, i.e. the discrepancy is evident only in the cases that R&D is developed in-house and this in-house R&D is expended through the P&L. Considering that only in-house developed R&D can cause a discrepancy between accounting and statistical standards, the analysis that follows concentrates on in-house R&D only.

Impact of incorrect accounting treatment on external statistics if this is not taken into account

In cases where in-house developed R&D is expended through the P&L and this is not adjusted when compiling external statistics, then:

- Profits of the company are reduced at the time period when R&D is expended through the P&L. This causes lower reinvested earnings which shouldn't have been the case.
- If this R&D was capitalised (as per the correct statistical treatment), it would mean that CFC should have been applied on that. This CFC would decrease the profits of the company and thus lower reinvested earnings.
- The revised reinvested earnings, apart from the change in primary income, would also affect the FDI category of the financial account and the IIP.

Correcting for the above (i.e. removing R&D from P&L and capitalising it), this will increase the profits attributed to the shareholder at the time period when R&D is expended although it would decrease profits in subsequent periods through the impact of CFC. The above, in turn, will impact, in a similar way, FDI financial transactions and stocks.

Methodology followed to tackle this reservation

The Cyprus FDI statistics, in the case of R&D, follow the accounting and not the statistical treatment (i.e. there is no adjustment for the R&D that is expended through P&L). In order to assess the magnitude of the incorrect statistical treatment, the following methodology was followed (it should be noted that the work done was a collaboration between the Central Bank of Cyprus (CBC) and the Statistical Service of Cyprus (CYSTAT)):

Debit side

- CYSTAT provided the CBC the annual R&D based on the Frascati manual (i.e. in-house developed R&D). The statistics provided were broken down by the most significant companies for each available year (see link [CYSTAT - R&D](#) for the summarised R&D statistics).
- CBC linked the companies provided by CYSTAT with the FDI companies in its statistics so to allocate them between companies with resident shareholders and non-resident shareholders (both direct and indirect non-resident shareholders).
- The ratio of the R&D that was to be expended through the P&L was estimated based on a small ad-hoc survey addressed to the most significant R&D companies with non-resident shareholder.
- Based on the estimation of the R&D that was expended through the P&L, an estimate of the respective CFC was calculated.

Credit side

Although for the debit side, available data made the estimate on the impact of the incorrect treatment of R&D possible to be calculated, this was not the case for the credit side. Due to this, the estimation for the credit side was based on the behaviour of the debit side (i.e. we assume that both, R&D on the debit and the credit side behave the same way).

In order to be as comprehensive as possible, we used four different methods to estimate the impact on the credit side, and all the results will be presented. The methods used are:

- Estimation of a rate of return for the impact of the debit side and application to the credit side. Specifically, the ratio of (total impact on RIE debit/total liabilities stocks) per year was applied to the respective asset stock so to estimate the impact on the credit side.
- Similar to the above, but instead of estimating the ratio on the total, this ratio was estimated by NACE sector.
- The rate of improvement of the income on the debit side was applied to the credit side. Specifically, the ratio of (total impact on RIE debit/total debit income) per year was applied to the respective credit side.
- Similar to the above, but instead of estimating the rate of improvement on the total, this was estimated by NACE sector.

Results

Debit side

The steps followed for the estimation of the impact of the correct statistical treatment of R&D on the debit side along with some notes for each step is as follows (Table 8.4.7 below shows the results for each step):

1. CYSTAT provided R&D expenditure divided into the sectors:
 - a) Government
 - b) Business enterprises
 - c) Higher education (private and public)
 - d) Private non-profit

From the above, for our purposes, the sectors of “business enterprises” and “private higher education” are of interest since for the others no non-resident shareholder is involved. CYSTAT, apart from the totals per sector, provided the most important companies for those

sectors. The individual companies provided by CYSTAT comprised of 79%, on average, of the total R&D.

As regards 2019 when R&D is not available, a growth rate of 16% is assumed on the 2018 figures (this growth rate was based on previous years).

2. The companies provided by CYSTAT were linked with FDI statistics so to exclude the companies that do not have a direct or indirect non-resident shareholder. It should be noted that for the R&D which was not allocated to a specific company, we assumed that this followed the findings for the individual companies that could be identified. Overall, around half of the amount of companies with R&D was found to be related with non-resident shareholders.
3. Given that not all R&D is expended through P&L, we surveyed the most important companies as to the share of their R&D that is expended through P&L. The surveyed companies comprised of 65% of the amount of R&D which was found to be related with non-resident shareholders. The R&D that is expended through the P&L in Cyprus was found to be between 21%-36% for years 2010-2019.
4. Given that expended R&D should have been capitalised, this would mean that a consumption of fixed capital should have been applied. In order to calculate this, CYSTAT provided an estimate of 8,2% for the annual rate for R&D (based on the PIM model).
5. The overall impact of the correct treatment of R&D on reinvested earnings of FDI as a % of GNI was found to be very small with the max impact of an individual year to reach 0,04%.

Table 8.4.7: Impact of the correct R&D treatment on the debit side of reinvested earnings of FDI

Million euros	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
STEP 1										
R&D expenditure	86,2	89,9	85,3	87,5	89,5	85,3	98,8	110,2	133,1	
by sector										
a) Government	16,9	14,7	13,7	12,3	12,4	11,1	10,5	11,0	11,1	
b) Business enterprises	14,8	13,8	14,0	17,0	20,0	19,5	36,6	40,9	53,9	
c) Higher education	42,9	47,5	46,7	47,1	43,6	42,6	39,3	45,4	53,4	
of which										
c.1) public institutions	37,4	40,8	39,7	40,1	35,9	35,3	32,3	36,4	43,1	
c.2) private institutions	5,5	6,7	7,0	7,0	7,8	7,3	7,1	9,0	10,3	
d) Private non-profit	11,6	13,9	11,0	11,0	13,5	12,2	12,4	12,9	14,7	
Total R&D Expenditure that can be potentially related with non resident shareholders (i.e. business enterprises + private higher education institutions) - Abbreviated as Private R&D - Sum of b) and c.2)	20,3	20,4	20,9	24,0	27,8	26,8	43,7	49,9	64,2	74,4
STEP 2										
Private R&D related to non-resident shareholding	7,4	7,9	7,0	8,3	9,9	11,9	26,8	29,5	39,7	46,3
STEP 3										
Private R&D related to non-resident shareholding expended through P&L	1,6	1,9	2,3	2,9	3,6	4,3	6,2	6,5	10,7	11,2
STEP 4										
Implied CFC on Private R&D related to non-resident shareholding expended through P&L STEP 3 * 8,2% - cumulative for years 2011 onwards	0,1	0,3	0,5	0,7	1,0	1,4	1,9	2,4	3,3	4,2
STEP 5										
Total impact on reinvested earnings - STEP 3 minus STEP 4	1,4	1,6	1,8	2,2	2,6	3,0	4,3	4,1	7,4	7,0
as a % of GNI	0,01	0,01	0,01	0,01	0,02	0,02	0,02	0,02	0,04	0,03

Important note: even though the above results were presented in totals, they are available by NACE activity.

Credit side

Given that available figures related to the credit side were not available (and very costly to obtain as this would have put enormous burden on our FDI respondents), we assumed that both, the debit and the credit side behave the same way.

It should be noted that SPEs were excluded from these estimations, since whatever impact they would have from the correct treatment of R&D by their subsidiaries/associates, this would have been forwarded to their shareholder (i.e. it would impact the debit side by the same amount as the credit side) and the net impact would be 0.

In addition, it should be stated that there is a number of Cypriot companies which have non-resident shareholders and these companies have subsidiaries or associates abroad which can be impacted by the correct treatment of R&D. Although for these companies, the impact on the credit side should impact the debit side as well, such adjustment on the debit side was not performed. Consequently,

these results should be assessed with caution and should be regarded as the maximum impact from the credit side workings since, most likely, the impact would have been moderated by a respective increase in the debit side.

As explained in the methodology above, four different methods were used in order to estimate the impact on the credit side.

The steps followed for the credit side are as follows:

1. The ratios for each different method were obtained using the results from the debit side. Some details and notes on the ratio obtained from each method are presented below:
 - Method 1: the total impact on reinvested earnings was divided by the total liabilities stocks. The average annual ratio was at 0,2%.
 - Method 2: the impact on reinvested earnings by NACE activity was divided by the respective liability stock.
Some ratios were negative due to the fact that stocks were negative (cumulative losses). For these ratios, the absolute ratio was used.
 - Method 3: The total impact of the income on the debit side was divided by the total income debit.
 - Method 4: the impact on reinvested earnings by NACE activity was divided by the total income of the specific NACE.
In certain cases, the income of NACE sectors for a number of years was negative, and thus, the ratio was negative. In these cases, the absolute ratio was used.
2. The ratios above were applied to the respective figures in the credit side. Before doing that, and due to the fact that there was an amount in the credit/ asset side that was unallocated by NACE activity, this was allocated to certain NACE activities. In order to allocate this, the average distribution per NACE sector was used in order to allocate the unallocated amount (the average unallocated amount on the total amount was at 9% for stocks and 3% for income). The results are presented in Table 8.4.8. Also, an average of those methods is presented.

Table 8.4.8: Impact of the correct treatment of R&D on the credit side

Million euros	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Method 1	0,6	0,6	0,2	0,4	0,4	0,4	1,0	1,0	2,8	2,8
Method 2	0,9	1,2	1,1	1,7	2,1	3,9	7,5	5,0	6,3	6,2
Method 3	0,4	1,4	0,5	23,9	0,2	2,2	1,8	1,8	2,9	1,5
Method 4	0,1	0,8	0,9	0,2	0,8	5,5	1,8	1,1	3,8	4,8
Average	0,5	1,0	0,7	6,5	0,9	3,0	3,0	2,2	3,9	3,8
as a % of GDP										
Method 1	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,01	0,01	0,01
Method 2	0,00	0,01	0,01	0,01	0,01	0,02	0,04	0,03	0,03	0,03
Method 3	0,00	0,01	0,00	0,13	0,00	0,01	0,01	0,01	0,01	0,01
Method 4	0,00	0,00	0,00	0,00	0,00	0,03	0,01	0,01	0,02	0,02
Average	0,00	0,01	0,00	0,04	0,01	0,02	0,02	0,01	0,02	0,02
as a % of GNI										
Method 1	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,01	0,01	0,01
Method 2	0,00	0,01	0,01	0,01	0,01	0,02	0,04	0,03	0,03	0,03
Method 3	0,00	0,01	0,00	0,13	0,00	0,01	0,01	0,01	0,01	0,01
Method 4	0,00	0,00	0,00	0,00	0,00	0,03	0,01	0,01	0,02	0,02
Average	0,00	0,00	0,00	0,04	0,01	0,02	0,02	0,01	0,02	0,02

Important note: the impact on reinvested earning on the credit side in 2013 when using method 3 was an outlier at 0,13. This is explained by the fact that in 2013, the Cypriot economy experienced a severe crisis (deposit haircut, capital controls, etc.) and thus a lot of companies recorded losses during the year. Due to this, the total credit income was only at €4,5 million). This led the ratio to be at 0,49 for this year, although the average ratio for the period 2010-2019 was at 0,05.

Overall impact on reinvested earnings

The results are presented in Table 8.4.9 below. For all the methods, only in one instance and only a single year the ratio was above 0,1% of GNI (specifically at 0,12%). As explained, this is an outlier and it was due to the negative developments in the Cypriot economy in 2013. The fact that this is an outlier is evident not only when comparing the values for 2013 for the other three methods, but also when comparing the result for 2013 for method 3 with the other years. All the other years for method 3, the result is either 0 or negative and only the result for 2013 is positive (in this respect, adding the impact on GNI for method 3 for all years, the total impact is at 0,02%).

Table 8.4.9: Overall impact from the correct treatment of R&D on reinvested earnings

Million euros	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Method 1	-0,8	-1,0	-1,6	-1,8	-2,2	-2,6	-3,4	-3,0	-4,6	-4,2
Method 2	-0,5	-0,4	-0,7	-0,5	-0,5	0,9	3,2	1,0	-1,1	-0,8
Method 3	-1,1	-0,2	-1,3	21,7	-2,4	-0,8	-2,5	-2,3	-4,5	-5,6
Method 4	-1,3	-0,9	-1,0	-2,0	-1,8	2,6	-2,5	-2,9	-3,6	-2,2
Average	-0,9	-0,6	-1,2	4,4	-1,7	0,0	-1,3	-1,8	-3,5	-3,2
as a % of GDP										
Method 1	0,00	-0,01	-0,01	-0,01	-0,01	-0,01	-0,02	-0,02	-0,02	-0,02
Method 2	0,00	0,00	0,00	0,00	0,00	0,01	0,02	0,00	-0,01	0,00
Method 3	-0,01	0,00	-0,01	0,12	-0,01	0,00	-0,01	-0,01	-0,02	-0,02
Method 4	-0,01	0,00	0,00	-0,01	-0,01	0,01	-0,01	-0,01	-0,02	-0,01
Average	0,00	0,00	-0,01	0,02	-0,01	0,00	-0,01	-0,01	-0,02	-0,01
as a % of GNI										
Method 1	0,00	0,00	-0,01	-0,01	-0,01	-0,01	-0,02	-0,02	-0,02	-0,02
Method 2	0,00	0,00	0,00	0,00	0,00	0,01	0,02	0,00	-0,01	0,00
Method 3	-0,01	0,00	-0,01	0,12	-0,01	0,00	-0,01	-0,01	-0,02	-0,03
Method 4	-0,01	0,00	-0,01	-0,01	-0,01	0,01	-0,01	-0,02	-0,02	-0,01
Average	0,00	0,00	-0,01	0,02	-0,01	0,00	-0,01	-0,01	-0,02	-0,01

Conclusion and future work

The impact of the correct statistical treatment of R&D on reinvested earnings is found to be non-material for Cyprus. There was one exception to that, for method 3 for the year 2013, although this is clearly an outlier, as explained above.

Even though the correct treatment of R&D was found to be non-material for Cyprus for the time period 2010-2019, this does not mean that the data will not be adjusted for future periods. Apart from continuing the above exercise for future time periods, the CBC will revise its FDI survey in order to ask companies to provide separately R&D that is expended through the P&L.

Indirectly owned enterprises

The coverage of these enterprises is through a detailed specification of the affiliates that should be considered as subsidiaries, associates and branches, respectively.

In particular, for determining the existence of the indirect FDI interest, the following rules apply:

- If the directly owned enterprise (DOE) is a subsidiary (more than 50%), the FDI relationship extends to the DOE's subsidiaries and sub-subsidiaries.
- If the directly owned enterprise (DOE) is an associate (between 10% and 50% for balance of payments statistical purposes), DOE's subsidiaries and sub-subsidiaries are also considered associates of the DI. DOE's associates are not considered to be in FDI relationship with the DI.
- Branches have the same treatment as subsidiaries.

Therefore, for the purpose of the compilation of balance of payments data, group (related) companies for a direct investor are all immediate direct investment enterprises, owned by at least 10%, and in addition, as of the second level (indirectly owned entities), every direct investment enterprise in which the immediate investor has more than 50% ownership.

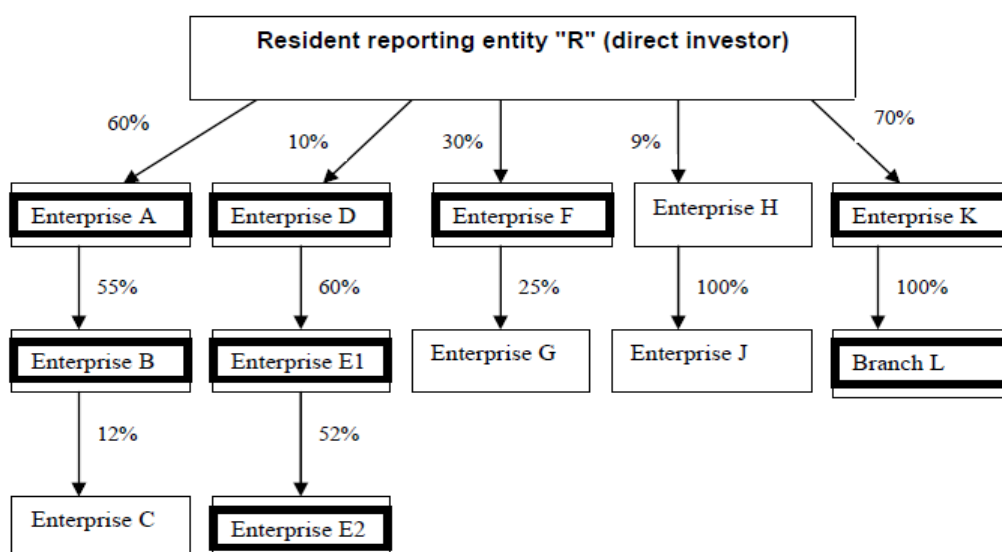
These indirectly owned enterprises should be taken into account when compiling FDI statistics. In particular, RIE and the value of the reserves of the indirectly owned enterprises (in proportion to % shareholding along the chain of ownership) should be assigned to the direct investor when compiling FDI statistics.

Fellow enterprises are enterprises which have the same holding entity, without any direct or indirect links between themselves. Any transactions between these companies are regarded as FDI transactions and should be recorded for balance of payments purposes although for these entities RIE cannot exist.

The following diagram illustrates a group of non-resident entities owned by a resident entity (outward investments). When reporting under CBC's survey, the resident entity needs to report on:

1. each direct investment ($\geq 10\%$) made in the equity capital of the non-resident enterprises indicated in bold (first row), and/or
2. the inter-company transactions with all the group enterprises (directly and indirectly owned) indicated in bold.

The same rules apply for inward investments.



Based on the diagram above, enterprise:

A = Subsidiary of R, Investment should be reported

B = Subsidiary of A, Subsidiary of R and therefore it should be taken into account when calculating the value of equity, investment in A

C = Associate of B, Not of R therefore no reporting

D = Associate of R, Investment should be reported

E1 = Subsidiary of D, Associate of R and therefore it should be taken into account when calculating the value of equity investment in D

E2 = Subsidiary of E1, Associate of R and therefore it should be taken into account when calculating the value of equity investment in D

F = Associate of R, Investment should be reported

G = Associate of F, Not of R therefore no reporting

H = Neither an Associate nor a Subsidiary, No reporting

J = Subsidiary of H, Not of R therefore no reporting

K = Subsidiary of R, Investment should be reported

L = Branch of K, Branch of R and therefore it should be taken into account when calculating the value of equity investment in K

Enterprises A, B, D, E1, E2, F, K, L are involved in a direct investment relationship with R and with each other. They all belong to the same group and any financial transactions between them represent direct investment transactions or intercompany transactions.

Although the instructions for the EFS survey cover the above, this is very hard to be followed for entities for which we collect such information from their financial statements. The difficulty when compiling data from financial statements is not only the identification of indirect links but also to the construction of RIE of the subsidiaries. Although this drawback has impact on the gross figures (credit and debit), this does not impact net figures. This is due that the entities which we collect information through their financial statements are SPEs. For these entities, whatever they earn from their subsidiaries are to be transferred fully to their non-resident shareholder. So, if something is

missing from the credit side, it will be missing from the debit side as well, so the net impact will be zero.

FDI register

FDI register which is part of the “Common Register” between the CBC and CYSTAT follows the general principles on residency, as laid down in the BPM6 and ESA 2010 manuals. Thus, all legal entities including special purpose entities (SPEs), are considered residents if registered/incorporated in Cyprus. In the case of shipping companies a special regime is applied (economic ownership).

The following characteristics are kept for FDI entities:

- Whether the entity is listed or unlisted
- Its institutional sector code
- Its economic activity code
- SPE flagging
- Relationships with immediate parties and other entities that transact.

Data validation and imputation

Data, especially from the largest enterprises, are validated at the individual level either by contacting directly the entity for explanations on the reported figures or from the financial statements of the enterprises. Additional information is also collected from press and checked with the companies. Moreover, in cases the said entity is included in the services category of the Current Account (and not involved in many domestic transactions), a cross check is done between the figures reported for net services and net primary income. In cases of large discrepancies between the two, we contact the entity for explanations.

As regards how non-response is dealt, an assumption of zero direct investment income of the reporting entities is made until their financial statements or their completed EFS Surveys for the reference period are collected and incorporated. An exception to this is when the said entity is participating and responded in the services survey for the particular reference period. In this case, an estimate of the direct investment income is done based on the net services reported.

It should be noted that there is no cut-off threshold for participating in the EFS Survey so no grossing up calculations are made. It should be noted that, as mentioned above, very small companies are allowed to report the EFS survey on an annual basis.

It should be noted that, as in the case of dividends, no adjustments for RIE are made to exports and imports due to valuation of intra-group transactions within MNEs (transfer pricing), as this is not found to be relevant for the case of Cyprus.

8.4.4 Other investment income (D44)

Investment income attributable to insurance policy holders

Income on equities of the investment funds sector are collected through the quarterly “Investment Funds” (IF) survey conducted by the CBC.

Data on insurance and pension services used to be collected from the banking system. CBC conducts a quarterly survey directly to domestic insurance companies. The results of this survey are incorporated into BoP data and National Accounts since September 2016. Reporting agents make the distinction between resident and non-resident insurance policy holders in domestic data sources.

Consequently, the investment income attributable to insurance policy holders payable to the Rest of the World is collected directly from domestic insurance companies (€13,5 million for 2017). In the case of insurance companies (reinsurance abroad) the said item is also collected on a quarterly basis directly from them via the above-mentioned survey (€0,4 million for 2017).

CBC in cooperation with CYSTAT made an estimation of the investment income on insurance contracts to resident insurance policy holders that do not belong to S. 128 sector (€9,6 million for 2017). This estimate is based on the ratio that derives from the property income of local insurance companies paid to non-residents insurance policy holders divided by the corresponding premiums received from non-residents. This ratio is multiplied by the premiums paid by residents (except S128) to the RoW. It should be noted that CBC investigated the possibility to use mirror data for this item, but no Member State reported any amount vis-à-vis Cyprus in recent periods.

The analytical results for year 2017 are shown in the table below:

Table 8.4.10: Net Impact of property income on GNI

	Credit	Debit	Net
S.128 survey	0,4	13,5	-13,1
Estimate for property income received from other sectors	9,6		
Total	10,0	13,5	-3,5

Investment income attributable to insurance policyholders is added to premiums in the calculation of the value of insurance services (exports and imports).

Regarding exports value, the premium supplements element (€13,5 million for 2017) already includes the investment income attributable to insurance policy holders. Furthermore, this amount is also included in D441 paid to the RoW. On the other hand, imports include only the small part of the quarterly survey (€0,4 million for 2017). Therefore, the estimated property income received from other sectors (€9,6 million for 2017) is added to the premium supplements element of the imports of insurance services. The said amount is also included in D441 received.

Consequently, the impact to the GNI is zero and it is shown in the table below:

Table 8.4.11: Total Impact of Property Income received from RoW on GNI

Imports of Services (€ million)	9,6
Property Income received from the Rest of the World (€ million)	9,6
Impact on GNI	0,0

It should be noted that the full amount of imported insurance is allocated as IC of market producers as it is unlikely for residents' households to purchase insurance services from abroad.

Investment income payable on pension entitlements

Amounts for cross-border flows of investment income payable on pension entitlements are negligible for Cyprus and are not covered.

Investment income attributable to collective investment fund shareholders

The sources to collect data on income attributable to collective investment fund shareholders, differ for the credit and the debit side.

As regards the credit side, two sources are used for the compilation of income attributable to collective investment fund shareholders, namely. Specifically, the two sources are:

- The monthly SHS survey which obtains data from resident organisations in the financial and non-financial sectors. This variable is on a security-by-security basis based on CSDB data.
- Data from third party holdings (TPH) (i.e. data collected by other banks of the Eurosystem through their respective SHS. These data concern Cypriot residents who use a custodian in those countries). The data used from TPH concern only households.

In the case of the debit side, the source used is the Investment funds survey (QIFS) conducted by the CBC. In principle, the frequency of the survey is monthly although for smaller investment funds this is done on a quarterly frequency (the majority of investment funds is submitting the survey on a monthly basis).

As regards the RIE of the investment funds on the debit side, in certain cases some adjustments are made in order to exclude price and exchange rate changes. In the near future extra sets of questions will be included in the QIFS in order to capture profits attributed to holding gains/losses.

The table below shows the sources and respective values for investment income attributable to collective investment fund shareholders for 2017.

Table 8.4.12: Investment income attributable to collective investment fund shareholders by source, 2017

Euro million	Credit	Debit	Net
Portfolio	57,3	37,5	19,8
QIFS survey	0,0	37,5	-37,5
TPH	1,9	0,0	1,9
SHS	55,4	0,0	55,4

Rent on land and sub-soil assets

Cross-border flows of rent on land receivable by the landowner, including owners of inland waters and rivers were not identified so far in Cyprus.

Data for cross-border flows of royalties' receivable by the units for granting the right to exploit sub-soil assets are collected directly from reporting entities or the government. Information is also collected from press.

CHAPTER 9: MAIN CLASSIFICATIONS USED

The classifications used for the compilation of the National Accounts in Cyprus are those stipulated by ESA2010.

9.0 Classifications used for the production approach

9.0.1 Classifications of economic activities

NACE Rev.2

The NACE classification was prepared by the Statistical Office of the European Union (EUROSTAT) in collaboration with the member states, and is based on the “International Standard Industrial Classification of all Economic Activities” (ISIC Rev. 4), developed by the United Nation’s Statistical Office. The application of this statistical classification of economic activities is compulsory for all member states and for all surveys in which statistical data on economic activities are collected. The NACE Rev. 2 digits in order to cover at a greater detail the various economic activities prevailing in classification was extended from 4 to 5 digits in order to cover at a greater detail the various economic activities prevailing in Cyprus.

9.0.2 Classifications of products by activity

CPA 2008

For the purposes of the Supply and Use Table compilation as well as for the subsequent balancing procedure the European CPA 2008 system (Classification of Products by Activity) is used.

9.1 Classifications used for the income approach

Compensation of employees and its elements (wages and salaries, employers’ contribution) are classified by branch of economic activity according to the NACE Rev.2 classification. Taxes and subsidies on production are also classified by NACE Rev.2.

9.2 Classifications used for the expenditure approach

COICOP

The Classification of Individual Consumption by Purpose (COICOP) is used to record household final consumption expenditure by purpose (see Annex 9.III).

COPNI

The Classification of the Purposes of NPISH (COPNI) is used to record the final consumption expenditure of the NPISH. (see Annex 9.IV).

The General Government sector

The annual accounting figures from the budget of the Central Government, the balance sheets of the local authorities and the semi-government organizations are processed in order to break down government final consumption expenditure into individual and collective final consumption and to allocate government expenditure to the relevant COFOG (Classification of the Functions of Government) categories (see Annex 9.V).

Changes in inventories

The following categories of stocks are provided from the annual economic surveys: Finished and Semi-finished goods, Raw materials, Fuels and Spare parts, Goods purchased for resale. The information resulted from the annual economic surveys can be published at the 3-digit NACE level (see Annex 10.VII). Changes in inventories are measured by the value of the entries into inventories less the value of withdrawals and the value of any recurrent losses of goods held in inventories. (see Annex 9.VI).

Gross Fixed Capital Formation

Gross Fixed Capital Formation consists of resident producers' acquisitions, less disposals, of fixed assets during a given period plus certain additions to the value of non-produced assets realized by the productive activity of producer or institutional units. Fixed assets are tangible or intangible assets produced as outputs from processes of production that are themselves used repeatedly, or continuously, in processes of production for more than one year (see Annex 9.VII)

Construction Projects

The coding system used in classifying construction projects is based on the Classification of Types of Construction (CC), published in 1996 by Eurostat, developed on the basis of the provisional Central Product Classification (see Annex 9.VIII).

CN8

The Combined Nomenclature (CN) which is used for External Trade Statistics, is the European Community's classification of goods, which meets requirements in terms of external trade statistics (both intra- and extra-Community) and the customs tariff within the meaning of Article 9 of the Treaty establishing the European Economic Community. The CN is based on the HS, the text of which is taken over in full and subdivided only for the requirements of external trade statistics, law on agricultural matters or the customs tariff. In addition to the above-mentioned legally binding elements of the HS, the CN also comprises supplementary notes on chapters (i.e. notes relating to CN subdivisions of HS subheadings), rates of duty and supplementary units. (see Annex 9. IX)

Classification of Imports by economic destination

Imports/Arrivals by economic destination are classified into five main categories: consumer goods, intermediate inputs, capital goods, transport equipment and parts thereof and fuels and lubricants.

The aforementioned data provides insight into the structure of demand in the country and is being used as a guideline in the calculation of Private Household Consumption and in the cross-check of Gross Fixed Capital Formation by detailed product breakdown (see Annex 9.X).

BOP

For the estimation of exports and imports of services data are obtained from the Balance of Payments which is compiled and provided by the Central Bank of Cyprus. As from October 2014, the Central Bank of Cyprus publishes external statistics data compiled in accordance with the new international methodological standards (ESA 2010, BPM6) see Annex 9.XI.

Annex 9.I - NACEs as used in Cyprus

A	AGRICULTURE, FORESTRY AND FISHING
01	Crop and animal production, hunting and related service activities
01.1	Growing of non-perennial crops
01.11	Growing of cereals (except rice), leguminous crops and oil seeds
01.11.1	Growing of cereals
01.11.2	Leguminous crops
01.12	Growing of rice
01.12.1	Growing of rice
01.13	Growing of vegetables and melons, roots and tubers
01.13.1	Growing potatoes
01.13.2	Growing of vegetables and melons
01.13.3	Growing of mushrooms
01.13.4	Production of vegetable seedlings
01.14	Growing of sugar cane
01.14.1	Growing of sugar cane
01.15	Growing of tobacco
01.15.1	Growing of tobacco
01.16	Growing of fibre crops
01.16.1	Growing of fibre crops
01.19	Growing of other non-perennial crops
01.19.1	Growing of other non- perennial crops
01.2	Growing of perennial crops
01.21	Growing of grapes
01.21.1	Growing of grapes
01.22	Growing of tropical and subtropical fruits
01.22.1	Growing of tropical and subtropical fruits
01.23	Growing of citrus fruits
01.23.1	Growing of citrus fruits
01.24	Growing of pome fruits and stone fruits
01.24.1	Growing of pome fruits and stone fruits
01.25	Growing of other tree and bush fruits and nuts
01.25.1	Growing of edible nuts (almonds, walnuts, hazelnuts)
01.25.2	Growing of carobs
01.26	Growing of oleaginous fruits
01.26.1	Growing of oleaginous fruits
01.27	Growing of beverage crops
01.27.1	Growing of beverage crops
01.28	Growing of spices, aromatic, drug and pharmaceutical crops
01.28.1	Growing of spices, aromatic, drug and pharmaceutical crops
01.29	Growing of other perennial crops
01.29.1	Growing of other perennial crops
01.3	Plant propagation
01.30	Plant propagation
01.30.1	Tree plant nurseries (incl. plants for ornamental purposes)

- 01.4 Animal production**
- 01.41 Raising of dairy cattle**
 - 01.41.1 Raising of dairy cattle
- 01.42 Raising of other cattle and buffaloes**
 - 01.42.1 Raising of other cattle and buffaloes
- 01.43 Raising of horses and other equines**
 - 01.43.1 Raising of horses and other equines
- 01.44 Raising of camels and camelids**
 - 01.44.1 Raising of camels and camelids
- 01.45 Raising of sheep and goats**
 - 01.45.1 Raising of sheep and goats
- 01.46 Raising of swine/pigs**
 - 01.46.1 Raising of swine / pigs
- 01.47 Raising of poultry**
 - 01.47.1 Raising of poultry
- 01.49 Raising of other animals**
 - 01.49.1 Raising of quails
 - 01.49.2 Raising of rabbits
 - 01.49.3 Raising of pigeons
 - 01.49.4 Bee- keeping
 - 01.49.5 Breeding of dogs
 - 01.49.9 Farming of other animals (incl. game propagation, farming of ostriches,etc.)
- 01.5 Mixed farming**
- 01.50 Mixed farming**
 - 01.50.1 Mixed farming (growing of crops combined with farming of animals)
- 01.6 Support activities to agriculture and post-harvest crop activities**
- 01.61 Support activities for crop production**
 - 01.61.1 Support activities for crop production
 - 01.61.2 Picking of fruit and vegetables on a fee or contract basis
- 01.62 Support activities for animal production**
 - 01.62.1 Support activities for animal production
- 01.63 Post-harvest crop activities**
 - 01.63.1 Post- harvest crop activities
- 01.64 Seed processing for propagation**
 - 01.64.1 Seed processing for propagation
- 01.7 Hunting, trapping and related service activities**
- 01.70 Hunting, trapping and related service activities**
 - 01.70.1 Hunting, trapping and related service activities (on commercial basis)

- 02 Forestry and logging**
- 02.1 Silviculture and other forestry activities**
- 02.10 Silviculture and other forestry activities**
 - 02.10.1 Silviculture and other forestry activities
- 02.2 Logging**
- 02.20 Logging**
 - 02.20.1 Logging
 - 02.20.2 Production of charcoal by means of traditional methods
- 02.3 Gathering of wild growing non-wood products**

02.30 **Gathering of wild growing non-wood products**
02.30.1 Gathering of wild growing non- wood products
02.4 **Support services to forestry**
02.40 **Support services to forestry**
02.40.1 Support services to forestry

03 **Fishing and aquaculture**

03.1 **Fishing**
03.11 **Marine fishing**
03.11.1 Marine fishing
03.12 **Freshwater fishing**
03.12.1 Freshwater fishing
03.2 **Aquaculture**
03.21 **Marine aquaculture**
03.21.1 Marine aquaculture
03.22 **Freshwater aquaculture**
03.22.1 Freshwater aquaculture

B **MINING AND QUARRYING**

05 **Mining of coal and lignite**

05.1 **Mining of hard coal**
05.10 **Mining of hard coal**
05.10.1 Mining of hard coal
05.2 **Mining of lignite**
05.20 **Mining of lignite**
05.20.1 Mining of lignite

06 **Extraction of crude petroleum and natural gas**

06.1 **Extraction of crude petroleum**
06.10 **Extraction of crude petroleum**
06.10.1 Extraction of crude petroleum
06.2 **Extraction of natural gas**
06.20 **Extraction of natural gas**
06.20.1 Extraction of natural gas

07 **Mining of metal ores**

07.1 **Mining of iron ores**
07.10 **Mining of iron ores**
07.10.1 Mining of iron ores
07.2 **Mining of non-ferrous metal ores**
07.21 **Mining of uranium and thorium ores**
07.21.1 Mining of uranium and thorium ores
07.29 **Mining of other non-ferrous metal ores**
07.29.1 Mining of other non-ferrous metal ores

08 **Other mining and quarrying**

08.1 **Quarrying of stone, sand and clay**

- 08.11 Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate**
- 08.11.1 Quarrying of ornamental and building stone
- 08.11.2 Quarrying of marble
- 08.11.3 Quarrying of havara
- 08.11.4 Quarrying of limestone and gypsum (gypsum raw)
- 08.11.5 Quarrying of chalk and dolomite
- 08.11.6 Quarrying of slate
- 08.12 Operation of gravel and sand pits; mining of clays and kaolin**
- 08.12.1 Extraction, breaking and crushing of stone, gravel and sand
- 08.12.2 Mining of clays
- 08.12.3 Mining of bentonite and kaolin
- 08.9 Mining and quarrying n.e.c.**
- 08.91 Mining of chemical and fertilizer minerals**
- 08.91.1 Extraction of iron pyrites
- 08.91.2 Mining of umber and other ochres
- 08.92 Extraction of peat**
- 08.92.1 Extraction of peat
- 08.93 Extraction of salt**
- 08.93.1 Extraction of salt
- 08.99 Other mining and quarrying n.e.c.**
- 08.99.1 Mining of asbestos
- 08.99.9 Other mining and quarrying n.e.c.

- 09 Mining support service activities**
- 09.1 Support activities for petroleum and natural gas extraction**
- 09.10 Support activities for petroleum and natural gas extraction**
- 09.10.1 Support activities for petroleum and natural gas extraction
- 09.9 Support activities for other mining and quarrying**
- 09.90 Support activities for other mining and quarrying**
- 09.90.1 Support activities for other mining and quarrying

C MANUFACTURING

- 10 Manufacture of food products**
- 10.1 Processing and preserving of meat and production of meat products**
- 10.11 Processing and preserving of meat**
- 10.11.1 Production of fresh, chilled or frozen meat
- 10.11.2 Production and drying of hides, skins and pulled wool
- 10.12 Processing and preserving of poultry meat**
- 10.12.1 Production and preserving of poultry meat
- 10.13 Production of meat and poultry meat products**
- 10.13.1 Production of meat and poultry meat products
- 10.2 Processing and preserving of fish, crustaceans and molluscs**
- 10.20 Processing and preserving of fish, crustaceans and molluscs**
- 10.20.1 Processing and preserving of fish, crustaceans and molluscs
- 10.3 Processing and preserving of fruit and vegetables**
- 10.31 Processing and preserving of potatoes**
- 10.31.1 Processing and preserving of potatoes

- 10.31.2 Manufacture of potatoes chips and other snacks
- 10.32 Manufacture of fruit and vegetable juice**
- 10.32.1 Manufacture of fruit and vegetable juice (incl. fruit drinks and nectars)
- 10.39 Other processing and preserving of fruit and vegetables**
- 10.39.1 Processing and preserving of fruit and vegetables n.e.c.
- 10.39.2 Processing of nuts
- 10.4 Manufacture of vegetable and animal oils and fats**
- 10.41 Manufacture of oils and fats**
- 10.41.1 Production of crude olive oil
- 10.41.2 Production of refined olive-oil
- 10.41.3 Production of other crude vegetable oils
- 10.41.4 Production of other refined vegetable oils
- 10.42 Manufacture of margarine and similar edible fats**
- 10.42.1 Manufacture of margarine and similar edible fats
- 10.5 Manufacture of dairy products**
- 10.51 Operation of dairies and cheese making**
- 10.51.1 Production of pasteurised milk, milk cream and butter
- 10.51.2 Production of cheese and curd
- 10.51.3 Production of dairy products n.e.c. (incl. yoghurt)
- 10.52 Manufacture of ice cream**
- 10.52.1 Production of ice cream and other edible ice
- 10.6 Manufacture of grain mill products, starches and starch products**
- 10.61 Manufacture of grain mill products**
- 10.61.1 Production of flour from cereals and vegetables
- 10.61.2 Production of other grain mill products (e.g. groats)
- 10.62 Manufacture of starches and starch products**
- 10.62.1 Manufacture of starches and starch products
- 10.7 Manufacture of bakery and farinaceous products**
- 10.71 Manufacture of bread; manufacture of fresh pastry goods and cakes**
- 10.71.1 Manufacture of bread and rolls
- 10.71.2 Manufacture of fresh pastry goods and cakes
- 10.72 Manufacture of rusks and biscuits; manufacture of preserved pastry goods and cakes**
- 10.72.1 Manufacture of rusks and biscuits and "dry" bakery products
- 10.72.2 Manufacture of preserved pastry goods and cakes
- 10.72.3 Manufacture of snack products whether sweet or salted
- 10.73 Manufacture of macaroni, noodles, couscous and similar farinaceous products**
- 10.73.1 Manufacture of macaroni, noodles, couscous and similar farinaceous products
- 10.8 Manufacture of other food products**
- 10.81 Manufacture of sugar**
- 10.81.1 Manufacture of sugar
- 10.82 Manufacture of cocoa, chocolate and sugar confectionery**
- 10.82.1 Manufacture of cocoa, chocolate, chocolate confectionery and sugar confectionery
- 10.83 Processing of tea and coffee**
- 10.83.1 Processing and packing of coffee and tea. Production of coffee products and herb infusions
- 10.84 Manufacture of condiments and seasonings**
- 10.84.1 Manufacture of spices, sauces, condiments, prepared mustard, vinegar and salt
- 10.85 Manufacture of prepared meals and dishes**

- 10.85.1 Manufacture of frozen prepared meals and dishes
- 10.86 Manufacture of homogenized food preparations and dietetic food**
- 10.86.1 Manufacture of homogenised food preparations and dietetic food
- 10.89 Manufacture of other food products n.e.c.**
- 10.89.1 Manufacture, processing and bottling of other food products n.e.c.
- 10.9 Manufacture of prepared animal feeds**
- 10.91 Manufacture of prepared feeds for farm animals**
- 10.91.1 Manufactures of prepared feeds for farm animals
- 10.92 Manufacture of prepared pet foods**
- 10.92.1 Manufactures of prepared pet foods

- 11 Manufacture of beverages**
- 11.0 Manufacture of beverages**
- 11.01 Distilling, rectifying and blending of spirits**
- 11.01.1 Distilling, rectifying and blending of spirits (e.g. whisky, brandy, gin, liqueurs, etc.)
- 11.02 Manufacture of wine from grape**
- 11.02.1 Manufacture of wine from grape
- 11.03 Manufacture of cider and other fruit wines**
- 11.03.1 Manufacture of cider and other fruit wines
- 11.04 Manufacture of other non-distilled fermented beverages**
- 11.04.1 Manufacture of vermouth and similar beverages
- 11.05 Manufacture of beer**
- 11.05.1 Manufacture of beer
- 11.06 Manufacture of malt**
- 11.06.1 Manufacture of malt
- 11.07 Manufacture of soft drinks; production of mineral waters and other bottled waters**
- 11.07.1 Production of soft drinks. Production and bottling of natural mineral waters

- 12 Manufacture of tobacco products**
- 12.0 Manufacture of tobacco products**
- 12.00 Manufacture of tobacco products**
- 12.00.1 Processing of tobacco leaves and manufacture of tobacco products

- 13 Manufacture of textiles**
- 13.1 Preparation and spinning of textile fibres**
- 13.10 Preparation and spinning of textile fibres**
- 13.10.1 Preparation and spinning of textile fibres (cotton, wooll, worst and silk)
- 13.10.2 Manufacture of sewing threads of any textile material
- 13.10.3 Preparation and spinning of other textile fibres
- 13.2 Weaving of textiles**
- 13.20 Weaving of textiles**
- 13.20.1 Weaving of textiles (using cotton, silk, wool, linum)
- 13.20.2 Other textile weaving (using hemp, jute, bast, polypropylene fibres, etc.)
- 13.3 Finishing of textiles**
- 13.30 Finishing of textiles**
- 13.30.1 Finishing of textiles (bleaching, dyeing, printing, etc.) of not self-produced textiles and textile articles including wearing apparel
- 13.9 Manufacture of other textiles**

- 13.91** **Manufacture of knitted and crocheted fabrics**
- 13.91.1 Manufacture of knitted and crocheted fabrics
- 13.92** **Manufacture of made-up textile articles, except apparel**
- 13.92.1 Manufacture of made-up articles of any textile material for the household (e.g. blankets, table, toilet or kitchen linen, quilts, cushions, furniture or bed covers, curtains, etc.)
- 13.92.2 Manufacture of other made-up textiles (e.g. tarpaulins, tents, covers for cars, flags, sleeping bags, camping goods, etc.)
- 13.93** **Manufacture of carpets and rugs**
- 13.93.1 Manufacture of carpets and rugs
- 13.94** **Manufacture of cordage, rope, twine and netting**
- 13.94.1 Manufacture of rope, twine and cables of textile fibres. Manufacture of nets and other products made of rope, twine or netting (incl. loading slings)
- 13.95** **Manufacture of non-wovens and articles made from non-wovens, except apparel**
- 13.95.1 Manufacture of non-wovens and articles made from non-wovens, except apparel
- 13.96** **Manufacture of other technical and industrial textiles**
- 13.96.1 Manufacture of textile wadding and articles of wadding (sanitary towels or tampons), fabrics impregnated, coated, covered or laminated with plastic
- 13.99** **Manufacture of other textiles n.e.c.**
- 13.99.1 Manufacture of felt, labels, badges, lace and embroidery
- 13.99.9 Manufacture of other textiles (incl. buttons and belt covering)

- 14** **Manufacture of wearing apparel**
- 14.1** **Manufacture of wearing apparel, except fur apparel**
- 14.11** **Manufacture of leather clothes**
- 14.11.1 Manufacture of weaving apparel made of leather or imitation leather
- 14.12** **Manufacture of workwear**
- 14.12.1 Manufacture of workwear
- 14.13** **Manufacture of other outerwear**
- 14.13.1 Manufacture of other outerwear made of woven knitted or crocheted fabric non-wovens, etc., for men, women and children
- 14.14** **Manufacture of underwear**
- 14.14.1 Manufacture of shirts, T-shirts and blouses
- 14.14.2 Manufacture of pyjamas, night dresses, dressing gowns and underwear for men, women and children
- 14.19** **Manufacture of other wearing apparel and accessories**
- 14.19.1 Manufacture of babies' garments
- 14.19.2 Manufacture of athlete's wear, skisuits, swimwear, etc.
- 14.19.3 Manufacture of other clothing accessories (e.g. gloves, belts, shawls, ties, cravats, etc.)
- 14.19.4 Manufacture of hats and caps
- 14.2** **Manufacture of articles of fur**
- 14.20** **Manufacture of articles of fur**
- 14.20.1 Manufacture of articles made of furskins
- 14.3** **Manufacture of knitted and crocheted apparel**
- 14.31** **Manufacture of knitted and crocheted hosiery**
- 14.31.1 Manufacture of hosiery (incl. socks, tights and panty-hose)
- 14.39** **Manufacture of other knitted and crocheted apparel**
- 14.39.1 Manufacture of knitted and crocheted pullovers, cardigans, jerseys and similar articles
- 15** **Manufacture of leather and related products**

- 15.1 Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness; dressing and dyeing of fur**
- 15.11 Tanning and dressing of leather; dressing and dyeing of fur**
 - 15.11.1 Dressing (e.g. scraping, tanning, bleaching, etc.) and dyeing of furskins.
 - 15.11.2 Production of tanned leather. Manufacture of dressed leather and composition leather
- 15.12 Manufacture of luggage, handbags and the like, saddlery and harness**
 - 15.12.1 Manufacture of luggage, handbags and the like of any material. Manufacture of saddlery, harness and other articles of leather or composition leather. Leather cutting
- 15.2 Manufacture of footwear**
- 15.20 Manufacture of footwear**
 - 15.20.1 Manufacture of footwear of any material
 - 15.20.2 Manufacture of parts of footwear (e.g. uppers and parts of uppers, outer and inner soles, heels, etc.) (incl. sewing of footwear)

- 16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials**
- 16.1 Sawmilling and planing of wood**
- 16.10 Sawmilling and planing of wood**
 - 16.10.1 Sawmilling and planing of wood. Impregnation of wood
- 16.2 Manufacture of products of wood, cork, straw and plaiting materials**
- 16.21 Manufacture of veneer sheets and wood-based panels**
 - 16.21.1 Manufacture of plywood, laminboard, particle board, fibre board, other panels and boards and veneer sheets
- 16.22 Manufacture of assembled parquet floors**
 - 16.22.1 Manufacture of parquet floor blocks
- 16.23 Manufacture of other builders' carpentry and joinery**
 - 16.23.1 Manufacture of builders' carpentry and joinery
 - 16.23.2 Manufacture of prefabricated buildings or elements thereof of wood
- 16.24 Manufacture of wooden containers**
 - 16.24.1 Manufacture of wooden packing cases, boxes, barrels, pallets, etc.
- 16.29 Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials**
 - 16.29.1 Manufacture of wooden frames, statuettes, ornaments and other products of wood n.e.c.(incl. wood turner)
 - 16.29.2 Manufacture of articles of cork, plaits, basketware and wickerwork of straw and plaiting materials

- 17 Manufacture of paper and paper products**
- 17.1 Manufacture of pulp, paper and paperboard**
- 17.11 Manufacture of pulp**
 - 17.11.1 Manufacture of pulp
- 17.12 Manufacture of paper and paperboard**
 - 17.12.1 Manufacture of paper and paperboard
- 17.2 Manufacture of articles of paper and paperboard**
- 17.21 Manufacture of corrugated paper and paperboard and of containers of paper and paperboard**
 - 17.21.1 Manufacture of containers, boxes, sacks and bags of paper or paperboard
- 17.22 Manufacture of household and sanitary goods and of toilet requisites**

- 17.22.1 Manufacture of household and personal hygiene paper and wadding and articles of wadding
- 17.23 Manufacture of paper stationary**
- 17.23.1 Manufacture of paper stationery, envelopes and letter - cards
- 17.24 Manufacture of wallpaper**
- 17.24.1 Manufacture of wallpaper
- 17.29 Manufacture of other articles of paper and paperboard**
- 17.29.1 Manufacture of labels and other articles of paper and paperboard .

- 18 Printing and reproduction of recorded media**
- 18.1 Printing and service activities related to printing**
- 18.11 Printing of newspapers**
- 18.11.1 Printing of newspapers
- 18.12 Other printing**
- 18.12.1 Other printing (excl. cloth printing)
- 18.13 Pre-press and pre-media services**
- 18.13.1 Pre- press and pre-media services
- 18.14 Binding and related services**
- 18.14.1 Bookbinding
- 18.14.9 Ancillary activities related to printing
- 18.2 Reproduction of recorded media**
- 18.20 Reproduction of recorded media**
- 18.20.1 Reproduction of sound recording (I.e. reproduction from master copies of gramophone records, compact and DVD discs and tapes with music)
- 18.20.2 Reproduction of video recording (I.e. reproduction from master copies of tapes, records, compact and DVD discs and other video recordings with motion pictures)
- 18.20.3 Reproduction of computer media from master copies of software and data on discs and tapes

- 19 Manufacture of coke and refined petroleum products**
- 19.1 Manufacture of coke oven products**
- 19.10 Manufacture of coke oven products**
- 19.10.1 Manufacture of coke oven products
- 19.2 Manufacture of refined petroleum products**
- 19.20 Manufacture of refined petroleum products**
- 19.20.1 Manufacture of refined petroleum products

- 20 Manufacture of chemicals and chemical products**
- 20.1 Manufacture of basic chemicals, fertilizers and nitrogen compounds, plastics and synthetic rubber in primary forms**
- 20.11 Manufacture of industrial gases**
- 20.11.1 Manufacture of oxygen, acetylene, carbon dioxide and other industrial gases
- 20.12 Manufacture of dyes and pigments**
- 20.12.1 Manufacture of dyes and pigments in basic form or as concentrate
- 20.13 Manufacture of other inorganic basic chemicals**
- 20.13.1 Manufacture of other inorganic basic chemicals
- 20.14 Manufacture of other organic basic chemicals**
- 20.14.1 Manufacture of other organic basic chemicals (e.g. hydrocarbons, ethylic alcohol)

- 20.14.2 Production of charcoal by means of industrial methods (i.e. distillation of wood)
- 20.15 Manufacture of fertilizers and nitrogen compounds**
- 20.15.1 Manufacture of fertilisers and nitrogen compounds
- 20.16 Manufacture of plastics in primary forms**
- 20.16.1 Manufacture of plastics in primary forms
- 20.17 Manufacture of synthetic rubber in primary forms**
- 20.17.1 Manufacture of synthetic rubber in primary forms
- 20.2 Manufacture of pesticides and other agrochemical products**
- 20.20 Manufacture of pesticides and other agrochemical products**
- 20.20.1 Manufacture of pesticides and other agrochemical products
- 20.3 Manufacture of paints, varnishes and similar coatings, printing ink and mastics**
- 20.30 Manufacture of paints, varnishes and similar coatings, printing ink and mastics**
- 20.30.1 Manufacture of paints, varnishes, thinners, lacquers and similar products
- 20.30.2 Manufacture of insulated construction materials and mastics
- 20.4 Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations**
- 20.41 Manufacture of soap and detergents, cleaning and polishing preparations**
- 20.41.1 Manufacture of soap, washing powders, detergents and other cleaning preparations
- 20.41.2 Manufacture of polishes and creams for leather, wood, glass, etc.
- 20.42 Manufacture of perfumes and toilet preparations**
- 20.42.1 Manufacture of perfumes and toilet preparations
- 20.5 Manufacture of other chemical products**
- 20.51 Manufacture of explosives**
- 20.51.1 Manufacture of explosives and pyrotechnic products
- 20.51.2 Manufacture of matches
- 20.52 Manufacture of glues**
- 20.52.1 Manufacture of glues
- 20.53 Manufacture of essential oils**
- 20.53.1 Manufacture of essential oils
- 20.59 Manufacture of other chemical products n.e.c.**
- 20.59.1 Manufacture of photographic chemical material
- 20.59.2 Manufacture of gelatine
- 20.59.9 Manufacture of other chemical products n.e.c.
- 20.6 Manufacture of man-made fibres**
- 20.60 Manufacture of man-made fibres**
- 20.60.1 Manufacture of man-made fibres

- 21 Manufacture of basic pharmaceutical products and pharmaceutical preparations**
- 21.1 Manufacture of basic pharmaceutical products**
- 21.10 Manufacture of basic pharmaceutical products**
- 21.10.1 Manufacture of basic pharmaceutical products
- 21.2 Manufacture of pharmaceutical preparations**
- 21.20 Manufacture of pharmaceutical preparations**
- 21.20.1 Manufacture of pharmaceutical preparations

- 22 Manufacture of rubber and plastic products**
- 22.1 Manufacture of rubber products**
- 22.11 Manufacture of rubber tyres and tubes; retreading and rebuilding of rubber tyres**

- 22.11.1 Manufacture of rubber tyres and tubes
- 22.11.2 Retreading and rebuilding of rubber tyres
- 22.19 Manufacture of other rubber products**
- 22.19.1 Manufacture of other rubber products
- 22.2 Manufacture of plastics products**
- 22.21 Manufacture of plastic plates, sheets, tubes and profiles**
- 22.21.1 Manufacture of plastic plates, sheets, tubes, pipes and pipe fittings, expanded polystyrene and foam rubber
- 22.22 Manufacture of plastic packing goods**
- 22.22.1 Manufacture of plastic packing goods
- 22.23 Manufacture of builders' ware of plastic**
- 22.23.1 Manufacture of builders' ware of plastic
- 22.29 Manufacture of other plastic products**
- 22.29.1 Manufacture of other plastic products

- 23 Manufacture of other non-metallic mineral products**
- 23.1 Manufacture of glass and glass products**
- 23.11 Manufacture of flat glass**
- 23.11.1 Manufacture of flat glass, including wired, coloured or tinted flat glass
- 23.12 Shaping and processing of flat glass**
- 23.12.1 Shaping and processing of flat glass
- 23.13 Manufacture of hollow glass**
- 23.13.1 Manufacture of hollow glass and ornamental glass articles
- 23.14 Manufacture of glass fibres**
- 23.14.1 Manufacture of glass fibres including glass wool
- 23.19 Manufacture and processing of other glass, including technical glassware**
- 23.19.1 Manufacture and processing of other glass, including technical glassware
- 23.2 Manufacture of refractory products**
- 23.20 Manufacture of refractory products**
- 23.20.1 Manufacture of refractory products
- 23.3 Manufacture of clay building materials**
- 23.31 Manufacture of ceramic tiles and flags**
- 23.31.1 Manufacture of mosaic tiles
- 23.32 Manufacture of bricks, tiles and construction products, in baked clay**
- 23.32.1 Manufacture of bricks, roof tiles and construction products, in baked clay
- 23.4 Manufacture of other porcelain and ceramic products**
- 23.41 Manufacture of ceramic household and ornamental articles**
- 23.41.1 Pottery
- 23.42 Manufacture of ceramic sanitary fixtures**
- 23.42.1 Manufacture of ceramic sanitary fixtures
- 23.43 Manufacture of ceramic insulators and insulating fittings**
- 23.43.1 Manufacture of ceramic insulators and insulating fittings
- 23.44 Manufacture of other technical ceramic products**
- 23.44.1 Manufacture of other technical ceramic products
- 23.49 Manufacture of other ceramic products**
- 23.49.1 Manufacture of other ceramic products
- 23.5 Manufacture of cement, lime and plaster**
- 23.51 Manufacture of cement**

- 23.51.1 Manufacture of cement
- 23.52 Manufacture of lime and plaster**
- 23.52.1 Manufacture of lime
- 23.52.2 Manufacture of plaster
- 23.6 Manufacture of articles of concrete, cement and plaster**
- 23.61 Manufacture of concrete products for construction purposes**
- 23.61.1 Manufacture of cement pipes, cement blocks, cement slates
- 23.61.2 Prefabricated structural components for building or civil engineering of cement, concrete
- 23.62 Manufacture of plaster products for construction purposes**
- 23.62.1 Manufacture of plaster products for construction purposes
- 23.63 Manufacture of ready-mixed concrete**
- 23.63.1 Manufacture of ready-mixed concrete
- 23.64 Manufacture of mortars**
- 23.64.1 Manufacture of powdered mortars
- 23.65 Manufacture of fibre cement**
- 23.65.1 Manufacture of fibre cement
- 23.69 Manufacture of other articles of concrete, plaster and cement**
- 23.69.1 Manufacture of other articles of concrete, plaster and cement
- 23.7 Cutting, shaping and finishing of stone**
- 23.70 Cutting, shaping and finishing of stone**
- 23.70.1 Cutting, shaping and finishing of stone (incl. crushing of marble)
- 23.9 Manufacture of abrasive products and non-metallic mineral products n.e.c**
- 23.91 Production of abrasive products**
- 23.91.1 Production of abrasive products
- 23.99 Manufacture of other non-metallic mineral products n.e.c.**
- 23.99.1 Manufacture of other non- metallic mineral products n.e.c. (incl. premix and processed umber, activated bentonite, etc.)

- 24 Manufacture of basic metals**
- 24.1 Manufacture of basic iron and steel and of ferro-alloys**
- 24.10 Manufacture of basic iron and steel and of ferro-alloys**
- 24.10.1 Manufacture of basic iron and steel and of ferro- alloys
- 24.2 Manufacture of tubes, pipes, hollow profiles and related fittings, of steel**
- 24.20 Manufacture of tubes, pipes, hollow profiles and related fittings, of steel**
- 24.20.1 Manufacture of tubes, pipes, hollow profiles and related fittings, of steel
- 24.3 Manufacture of other products of first processing of steel**
- 24.31 Cold drawing of bars**
- 24.31.1 Cold drawing of bars
- 24.32 Cold rolling of narrow strip**
- 24.32.1 Cold rolling of narrow strip
- 24.33 Cold forming or folding**
- 24.33.1 Cold forming or folding
- 24.34 Cold drawing of wire**
- 24.34.1 Wire drawing
- 24.4 Manufacture of basic precious and non-ferrous metals**
- 24.41 Precious metals production**
- 24.41.1 Precious metals production
- 24.42 Aluminium production**

- 24.42.1 Aluminium production
- 24.43 Lead, zinc and tin production**
- 24.43.1 Lead, zinc and tin production
- 24.44 Copper production**
- 24.44.1 Copper production
- 24.45 Other non-ferrous metal production**
- 24.45.1 Other non-ferrous metal production
- 24.46 Processing of nuclear fuel**
- 24.46.1 Processing of nuclear fuel
- 24.5 Casting of metals**
- 24.51 Casting of iron**
- 24.51.1 Casting of iron
- 24.51.2 Manufacture of tubes, pipes and hollow profiles and of tube or pipe fittings of cast-iron
- 24.52 Casting of steel**
- 24.52.1 Casting of steel
- 24.53 Casting of light metals**
- 24.53.1 Casting of light metals
- 24.54 Casting of other non-ferrous metals**
- 24.54.1 Casting of other non-ferrous metals

- 25 Manufacture of fabricated metal products, except machinery and equipment**
- 25.1 Manufacture of structural metal products**
- 25.11 Manufacture of metal structures and parts of structures**
- 25.11.1 Manufacture of metal structures and parts, construction site huts and prefabricated buildings mainly of metal
- 25.12 Manufacture of doors and windows of metal**
- 25.12.1 Manufacture of doors and windows of metal
- 25.2 Manufacture of tanks, reservoirs and containers of metal**
- 25.21 Manufacture of central heating radiators and boilers**
- 25.21.1 Manufacture of central heating radiators and boilers
- 25.29 Manufacture of other tanks, reservoirs and containers of metal**
- 25.29.1 Manufacture of other tanks, reservoirs and containers of metal
- 25.3 Manufacture of steam generators, except central heating hot water boilers**
- 25.30 Manufacture of steam generators, except central heating hot water boilers**
- 25.30.1 Manufacture of steam generators, except central heating hot water boilers
- 25.4 Manufacture of weapons and ammunition**
- 25.40 Manufacture of weapons and ammunition**
- 25.40.1 Manufacture of weapons and ammunition
- 25.5 Forging, pressing, stamping and roll-forming of metal; powder metallurgy**
- 25.50 Forging, pressing, stamping and roll-forming of metal; powder metallurgy**
- 25.50.1 Forging, pressing, stamping and roll-forming of metal; powder metallurgy
- 25.6 Treatment and coating of metals; Machining**
- 25.61 Treatment and coating of metals**
- 25.61.1 Anodising, coating and colouring of metals
- 25.61.2 Other services in the processing of metals (plating, buffing, carving, cleaning, sand blasting, etc.)
- 25.62 Machining**
- 25.62.1 Machining

- 25.7** **Manufacture of cutlery, tools and general hardware**
- 25.71** **Manufacture of cutlery**
- 25.71.1 Manufacture of cutlery
- 25.72** **Manufacture of locks and hinges**
- 25.72.1 Manufacture of locks and hinges
- 25.73** **Manufacture of tools**
- 25.73.1 Manufacture of knives and cutting blades, saws and sawblades for machines or for mechanical appliances
- 25.73.2 Manufacture of hand tools, blacksmith tools and interchangeable parts for hand tools and machine tools
- 25.9** **Manufacture of other fabricated metal products**
- 25.91** **Manufacture of steel drums and similar containers**
- 25.91.1 Manufacture of iron and steel drums, pails, cans and similar containers of a capacity less than 300 litres
- 25.92** **Manufacture of light metal packaging**
- 25.92.1 Manufacture of tins and cans for food products and metallic closures
- 25.93** **Manufacture of wire products, chain and springs**
- 25.93.1 Manufacture of metal cable, barbed wire, wire fencing, grill, netting and similar products, manufacture of nails and pins, electrodes and similar products
- 25.93.2 Manufacture of metal springs and chains
- 25.94** **Manufacture of fasteners and screw machine products**
- 25.94.1 Manufacture of bolts, rivets, screws, nuts and similar products
- 25.99** **Manufacture of other fabricated metal products n.e.c.**
- 25.99.1 Manufacture of metal household articles non electrical
- 25.99.2 Manufacture of products of tinsmithing, coppersmithing and other fabricated metal products n.e.c.

- 26** **Manufacture of computer, electronic and optical products**
- 26.1** **Manufacture of electronic components and boards**
- 26.11** **Manufacture of electronic components**
- 26.11.1 Manufacture of electronic components
- 26.11.9 Manufacture of other electronic valves and tubes including photovoltaic and electrical heaters
- 26.12** **Manufacture of loaded electronic boards**
- 26.12.1 Manufacture of loaded electronic boards
- 26.2** **Manufacture of computers and peripheral equipment**
- 26.20** **Manufacture of computers and peripheral equipment**
- 26.20.1 Manufacture of computers and peripheral equipment
- 26.3** **Manufacture of communication equipment**
- 26.30** **Manufacture of communication equipment**
- 26.30.1 Manufacture of apparatus for line telephony and line telegraphy
- 26.4** **Manufacture of consumer electronics**
- 26.40** **Manufacture of consumer electronics**
- 26.40.1 Manufacture of consumer electronics
- 26.5** **Manufacture of measuring, testing, navigating and control equipment; watches and clocks**
- 26.51** **Manufacture of instruments and appliances for measuring, testing and navigation**
- 26.51.1 Manufacture of instruments and appliances for measuring, testing and navigation

- 26.52** **Manufacture of watches and clocks**
- 26.52.1 Manufacture of watches and clocks
- 26.6** **Manufacture of irradiation, electromedical and electrotherapeutic equipment**
- 26.60** **Manufacture of irradiation, electromedical and electrotherapeutic equipment**
- 26.60.1 Manufacture of irradiation, electromedical and electrotherapeutic equipment
- 26.7** **Manufacture of optical instruments and equipment**
- 26.70** **Manufacture of optical instruments and photographic equipment**
- 26.70.1 Manufacture of optical instruments and photographic equipment
- 26.8** **Manufacture of magnetic and optical media**
- 26.80** **Manufacture of magnetic and optical media**
- 26.80.1 Manufacture of magnetic and optical media

- 27** **Manufacture of electrical equipment**
- 27.1** **Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus**
- 27.11** **Manufacture of electric motors, generators and transformers**
- 27.11.1 Manufacture and assembling of electric motors
- 27.11.2 Manufacture of generators and electrical transformers
- 27.12** **Manufacture of electricity distribution and control apparatus**
- 27.12.1 Manufacture of distribution and control panels for electric power
- 27.12.2 Manufacture of switches, fuses, plugs, sockets and similar apparatus
- 27.2** **Manufacture of batteries and accumulators**
- 27.20** **Manufacture of batteries and accumulators**
- 27.20.1 Manufacture of batteries and accumulators
- 27.3** **Manufacture of wiring and wiring devices**
- 27.31** **Manufacture of fibre optic cables**
- 27.31.1 Manufacture of fibre optic cables
- 27.32** **Manufacture of other electronic and electric wires and cables**
- 27.32.1 Manufacture of other electronic and electric wires and cables
- 27.33** **Manufacture of wiring devices**
- 27.33.1 Manufacture of wiring devices
- 27.4** **Manufacture of electric lighting equipment**
- 27.40** **Manufacture of electric lighting equipment**
- 27.40.1 Manufacture of electric lighting equipment
- 27.5** **Manufacture of domestic appliances**
- 27.51** **Manufacture of electric domestic appliances**
- 27.51.1 Manufacture of electric domestic appliances
- 27.52** **Manufacture of non-electric domestic appliances**
- 27.52.1 Manufacture of non- electric domestic appliances (incl. solar heaters)
- 27.9** **Manufacture of other electrical equipment**
- 27.90** **Manufacture of other electrical equipment**
- 27.90.1 Manufacture of other electrical equipment

- 28** **Manufacture of machinery and equipment n.e.c.**
- 28.1** **Manufacture of general - purpose machinery**
- 28.11** **Manufacture of engines and turbines, except aircraft, vehicle and cycle engines**
- 28.11.1 Manufacture of engines and turbines, except aircraft, vehicle and cycle engines
- 28.12** **Manufacture of fluid power equipment**

- 28.12.1 Manufacture of fluid power equipment
- 28.13 Manufacture of other pumps and compressors**
- 28.13.1 Manufacture of other pumps and compressors
- 28.14 Manufacture of other taps and valves**
- 28.14.1 Manufacture of other taps and valves
- 28.15 Manufacture of bearings, gears, gearing and driving elements**
- 28.15.1 Manufacture of bearings, gears, gearing and driving elements
- 28.2 Manufacture of other general-purpose machinery**
- 28.21 Manufacture of ovens, furnaces and furnace burners**
- 28.21.1 Manufacture of ovens, furnaces and furnace burners
- 28.22 Manufacture of lifting and handling equipment**
- 28.22.1 Manufacture of lifting and handling equipment
- 28.23 Manufacture of office machinery and equipment (except computers and peripheral equipment)**
- 28.23.1 Manufacture of office machinery and equipment (except computers and peripheral equipment)
- 28.24 Manufacture of power-driven hand tools**
- 28.24.1 Manufacture of power-driven hand tools
- 28.25 Manufacture of non-domestic cooling and ventilation equipment**
- 28.25.1 Manufacture of non- domestic cooling and ventilation equipment
- 28.29 Manufacture of other general-purpose machinery n.e.c.**
- 28.29.1 Manufacture of other general purpose machinery n.e.c.
- 28.3 Manufacture of agricultural and forestry machinery**
- 28.30 Manufacture of agricultural and forestry machinery**
- 28.30.1 Manufacture of agricultural tractors
- 28.30.2 Manufacture of agricultural and forestry machinery
- 28.4 Manufacture of metal forming machinery and machine tools**
- 28.41 Manufacture of metal forming machinery**
- 28.41.1 Manufacture of machine tools for working metals
- 28.49 Manufacture of other machine tools**
- 28.49.1 Manufacture of other machine tools
- 28.9 Manufacture of other special-purpose machinery**
- 28.91 Manufacture of machinery for metallurgy**
- 28.91.1 Manufacture of machinery for metallurgy
- 28.92 Manufacture of machinery for mining, quarrying and construction**
- 28.92.1 Manufacture of machinery for mining, quarrying and construction
- 28.93 Manufacture of machinery for food, beverage and tobacco processing**
- 28.93.1 Manufacture of machinery for food, beverage and tobacco processing
- 28.94 Manufacture of machinery for textile, apparel and leather production**
- 28.94.1 Manufacture of machinery for textile, apparel and leather production
- 28.95 Manufacture of machinery for paper and paperboard production**
- 28.95.1 Manufacture of machinery for paper and paperboard production
- 28.96 Manufacture of plastic and rubber machinery**
- 28.96.1 Manufacture of plastics and rubber machinery
- 28.99 Manufacture of other special-purpose machinery n.e.c.**
- 28.99.1 Manufacture of other special purpose machinery n.e.c.

- 29 Manufacture of motor vehicles, trailers and semi-trailers**

- 29.1** **Manufacture of motor vehicles**
- 29.10** **Manufacture of motor vehicles**
- 29.10.1 Manufacture of motor vehicles
- 29.2** **Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers**
- 29.20** **Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers**
- 29.20.1 Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers
- 29.3** **Manufacture of parts and accessories for motor vehicles**
- 29.31** **Manufacture of electrical and electronic equipment for motor vehicles**
- 29.31.1 Manufacture of electrical and electronic equipment for motor vehicles
- 29.32** **Manufacture of other parts and accessories for motor vehicles**
- 29.32.1 Manufacture of other parts and accessories for motor vehicles

- 30** **Manufacture of other transport equipment**
- 30.1** **Building of ships and boats**
- 30.11** **Building of ships and floating structures**
- 30.11.1 Building of ships and floating structures
- 30.12** **Building of pleasure and sporting boats**
- 30.12.1 Building of pleasure and sporting boats
- 30.2** **Manufacture of railway locomotives and rolling stock**
- 30.20** **Manufacture of railway locomotives and rolling stock**
- 30.20.1 Manufacture of railway locomotives and rolling stock
- 30.3** **Manufacture of air and spacecraft and related machinery**
- 30.30** **Manufacture of air and spacecraft and related machinery**
- 30.30.1 Manufacture of air and spacecraft and related machinery
- 30.4** **Manufacture of military fighting vehicles**
- 30.40** **Manufacture of military fighting vehicles**
- 30.40.1 Manufacture of military fighting vehicles
- 30.9** **Manufacture of transport equipment n.e.c.**
- 30.91** **Manufacture of motorcycles**
- 30.91.1 Manufacture of motorcycles
- 30.92** **Manufacture of bicycles and invalid carriages**
- 30.92.1 Manufacture of bicycles
- 30.92.2 Manufacture of invalid and baby carriages
- 30.99** **Manufacture of other transport equipment n.e.c.**
- 30.99.1 Manufacture of other transport equipment n.e.c.

- 31** **Manufacture of furniture**
- 31.0** **Manufacture of furniture**
- 31.01** **Manufacture of office and shop furniture**
- 31.01.1 Manufacture of furniture for offices, shops, churches, schools, restaurants
- 31.01.2 Manufacture of chairs and seats (of any material) except car seats, aircraft seats and railway car seats
- 31.02** **Manufacture of kitchen furniture**
- 31.02.1 Manufacture of kitchen furniture
- 31.03** **Manufacture of mattresses**

- 31.03.1 Manufacture of mattresses and mattresses supports
- 31.09 Manufacture of other furniture**
- 31.09.1 Manufacture of wooden furniture
- 31.09.2 Manufacture of metal furniture
- 31.09.3 Manufacture of furniture from other materials
- 31.09.4 Upholstery of furniture (except of car seats)
- 31.09.5 Painting and polishing of furniture

- 32 Other manufacturing**
- 32.1 Manufacture of jewellery, bijouterie and related articles**
- 32.11 Striking of coins**
- 32.11.1 Striking of coins
- 32.12 Manufacture of jewellery and related articles**
- 32.12.1 Goldsmithing, silversmithing and working of precious and semi-precious stones
- 32.13 Manufacture of imitation jewellery and related articles**
- 32.13.1 Manufacture of imitation jewellery and related articles
- 32.2 Manufacture of musical instruments**
- 32.20 Manufacture of musical instruments**
- 32.20.1 Manufacture of musical instruments
- 32.3 Manufacture of sports goods**
- 32.30 Manufacture of sports goods**
- 32.30.1 Manufacture of sports goods
- 32.4 Manufacture of games and toys**
- 32.40 Manufacture of games and toys**
- 32.40.1 Manufacture of games and toys
- 32.5 Manufacture of medical and dental instruments and supplies**
- 32.50 Manufacture of medical and dental instruments and supplies**
- 32.50.1 Manufacture of artificial teeth, bridges, etc.
- 32.50.2 Manufacture of medical and dental instruments and supplies
- 32.50.3 Manufacture of spectacle lenses and contact lenses
- 32.9 Other manufacturing n.e.c.**
- 32.91 Manufacture of brooms and brushes**
- 32.91.1 Manufacture of brooms and brushes
- 32.99 Other manufacturing n.e.c.**
- 32.99.1 Manufacture of pens, pencils, stamp pads, etc.
- 32.99.2 Manufacture of umbrellas, buttons, fasteners and their parts
- 32.99.3 Manufacture of candles
- 32.99.4 Manufacture of burial coffins
- 32.99.5 Other manufacturing n.e.c.

- 33 Repair and installation of machinery and equipment**
- 33.1 Repair of fabricated metal products, machinery and equipment**
- 33.11 Repair of fabricated metal products**
- 33.11.1 Repair of fabricated metal products of division 25
- 33.11.2 Installation, maintenance and repair services of weapons and weapons systems (including sporting guns)
- 33.12 Repair of machinery**
- 33.12.1 Repair of machinery, mainly of division 28

- 33.13** **Repair of electronic and optical equipment**
- 33.13.1 Repair of electronic and optical equipment
- 33.14** **Repair of electrical equipment**
- 33.14.1 Repair of electrical equipment
- 33.15** **Repair and maintenance of ships and boats**
- 33.15.1 Repair and maintenance of ships and boats
- 33.16** **Repair and maintenance of aircraft and spacecraft**
- 33.16.1 Repair and maintenance of aircraft and spacecraft
- 33.17** **Repair and maintenance of other transport equipment**
- 33.17.1 Repair and maintenance of other transport equipment
- 33.19** **Repair of other equipment**
- 33.19.1 Repair of other equipment (e.g. fishing nets, ropes, etc.)
- 33.2** **Installation of industrial machinery and equipment**
- 33.20** **Installation of industrial machinery and equipment**
- 33.20.1 Installation of industrial machinery and equipment

D ELECTRICITY, GAS, STEAM AND AIR CONDITIONING SUPPLY

- 35** **Electricity, gas, steam and air conditioning supply**
- 35.1** **Electric power generation, transmission and distribution**
- 35.11** **Production of electricity**
- 35.11.1 Production of electricity
- 35.12** **Transmission of electricity**
- 35.12.1 Transmission of electricity
- 35.13** **Distribution of electricity**
- 35.13.1 Distribution of electricity
- 35.14** **Trade of electricity**
- 35.14.1 Trade of electricity
- 35.2** **Manufacture of gas; distribution of gaseous fuels through mains**
- 35.21** **Manufacture of gas**
- 35.21.1 Manufacture of gas
- 35.22** **Distribution of gaseous fuels through mains**
- 35.22.1 Distribution of gaseous fuels through mains
- 35.23** **Trade of gas through mains**
- 35.23.1 Trade of gaseous fuels through mains
- 35.3** **Steam and air conditioning supply**
- 35.30** **Steam and air conditioning supply**
- 35.30.1 Steam and air conditioning supply
- 35.30.2 Manufacture of edible and non edible ice

E WATER SUPPLY; SEWERAGE, WASTE MANAGEMENT AND REMEDIATION ACTIVITIES

- 36** **Water collection, treatment and supply**
- 36.0** **Water collection, treatment and supply**
- 36.00** **Water collection, treatment and supply**
- 36.00.1 Collection and distribution of water
- 36.00.2 Purification of water
- 36.00.3 Desalting of sea water

- 37 Sewerage**
- 37.0 Sewerage**
- 37.00 Sewerage**
- 37.00.1 Sewage disposal boards
- 37.00.2 Operation of sewage plant stations
- 37.00.3 Cesspool cleaning activities

- 38 Waste collection, treatment and disposal activities; materials recovery**
- 38.1 Waste collection**
- 38.11 Collection of non-hazardous waste**
- 38.11.1 Refuse collection and disposal services of local authorities (e.g municipalities)
- 38.11.2 Private refuse collection and disposal services
- 38.12 Collection of hazardous waste**
- 38.12.1 Collection of hazardous waste
- 38.2 Waste treatment and disposal**
- 38.21 Treatment and disposal of non-hazardous waste**
- 38.21.1 Treatment and disposal of non- hazardous waste
- 38.22 Treatment and disposal of hazardous waste**
- 38.22.1 Treatment and disposal of hazardous waste
- 38.3 Materials recovery**
- 38.31 Dismantling of wrecks**
- 38.31.1 Dismantling of wrecks
- 38.31.2 Shipbreaking
- 38.32 Recovery of sorted materials**
- 38.32.1 Recycling of metal and non-metal waste and scrap

- 39 Remediation activities and other waste management services**
- 39.0 Remediation activities and other waste management services**
- 39.00 Remediation activities and other waste management services**
- 39.00.1 Sanitary services of local authorities
- 39.00.2 Remediation activities and other waste management services n.e.c.

F CONSTRUCTION

- 41 Construction of buildings**
- 41.1 Development of building projects**
- 41.10 Development of building projects**
- 41.10.1 Land Development Corporation
- 41.10.2 Private firms of land development
- 41.2 Construction of residential and non-residential buildings**
- 41.20 Construction of residential and non-residential buildings**
- 41.20.1 Construction of all types of buildings (private sector)

- 42 Civil engineering**
- 42.1 Construction of roads and railways**
- 42.11 Construction of roads and motorways**
- 42.11.1 Construction of streets and roads (private sector)

- 42.11.2 Construction work of the Public Works Department
- 42.11.3 Construction work of the District Administrations
- 42.11.4 Construction work of Municipalities and Community Boards
- 42.12 Construction of railways and underground railways**
- 42.12.1 Construction of railways and underground railways
- 42.13 Construction of bridges and tunnels**
- 42.13.1 Construction of bridges and tunnels
- 42.2 Construction of utility projects**
- 42.21 Construction of utility projects for fluids**
- 42.21.1 Construction of utility projects for fluids (incl. canals and water mains)
- 42.21.2 Construction work of the Water Boards
- 42.21.3 Construction work of the Sewage Boards
- 42.21.4 Water well drilling
- 42.21.5 Construction work of the Water Development Dept.
- 42.22 Construction of utility projects for electricity and telecommunications**
- 42.22.1 Construction work of the Electricity Authority of Cyprus
- 42.22.2 Construction work of the Telecommunications Authority of Cyprus
- 42.22.3 Construction of utility projects for electricity and telecommunications
- 42.9 Construction of other civil engineering projects**
- 42.91 Construction of water projects**
- 42.91.1 Construction of water projects (including dams, marinas)
- 42.99 Construction of other civil engineering projects n.e.c.**
- 42.99.1 Construction work of other civil engineering projects n.e.c. (incl. outdoor sports facilities, land subdivision)

- 43 Specialised construction activities**
- 43.1 Demolition and site preparation**
- 43.11 Demolition**
- 43.11.1 Demolition of buildings and other structures
- 43.12 Site preparation**
- 43.12.1 Earth moving
- 43.13 Test drilling and boring**
- 43.13.1 Test drilling and boring
- 43.2 Electrical, plumbing and other construction installation activities**
- 43.21 Electrical installation**
- 43.21.1 Electrical installations
- 43.21.2 Other installations
- 43.21.3 Other building installation
- 43.22 Plumbing, heat and air-conditioning installation**
- 43.22.1 Plumbing installations
- 43.22.2 Central heating installations
- 43.22.3 Air conditioning installations
- 43.29 Other construction installation**
- 43.29.1 Lifts and elevators installation services
- 43.29.2 Water-proofing, heat insulation or sound- proofing in buildings or other structures (incl. installation of blinds)
- 43.3 Building completion and finishing**
- 43.31 Plastering**

- 43.31.1 Plastering
- 43.32 Joinery installation**
- 43.32.1 Installation of non self-manufactured doors, windows, kitchens, frames and the like of wood or other materials
- 43.33 Floor and wall covering**
- 43.33.1 Floor and wall covering with parquet, carpets, linoleum coverings, ceramic, etc. (incl. Wall paper, marble-polishing and furred ceiling)
- 43.34 Painting and glazing**
- 43.34.1 Painting of buildings
- 43.34.2 Installation of glasses
- 43.39 Other building completion and finishing**
- 43.39.1 Other building completion
- 43.9 Other specialized construction activities**
- 43.91 Roofing activities**
- 43.91.1 Erection of roofs and roof covering
- 43.99 Other specialized construction activities n.e.c.**
- 43.99.1 Insulation work of roofing activities, de-humidification of buildings
- 43.99.2 Structural iron erection
- 43.99.3 Reinforce cement moulders
- 43.99.4 Concrete construction contractors
- 43.99.5 Other specialised construction activities n.e.c.
- 43.99.6 Renting of construction or demolition equipment with operator
- 43.99.7 Installation, maintenance and repair of private swimming pools

G WHOLESALE AND RETAIL TRADE; REPAIR OF MOTOR VEHICLES AND MOTORCYCLES

- 45 Wholesale and retail trade and repair of motor vehicles and motorcycles**
- 45.1 Sale of motor vehicles**
- 45.11 Sale of cars and light motor vehicles**
- 45.11.1 Sale of new automobiles and other vehicles up to 3.5 tons
- 45.11.2 Sale of used automobiles and other vehicles up to 3.5 tons
- 45.19 Sale of other motor vehicles**
- 45.19.1 Sale of new automobiles and other vehicles more than 3.5 tons
- 45.19.2 Sale of used automobiles and other vehicles more than 3.5 tons
- 45.2 Maintenance and repair of motor vehicles**
- 45.20 Maintenance and repair of motor vehicles**
- 45.20.1 Mechanical repairs and maintenance of motor vehicles
- 45.20.2 Electrical repairs of motor vehicles
- 45.20.3 Painting of motor vehicles
- 45.20.4 Bodywork repairs (panel- beating) of motor vehicles
- 45.20.5 Tyre repairs of motor vehicles
- 45.20.6 Radiator repairs of motor vehicles
- 45.20.7 Washing and polishing of motor vehicles
- 45.20.9 Other motor vehicle repairs (e.g exhaust fitting, wheel balancing, fitting glasses, fitting air- conditioning systems, etc.)
- 45.3 Sale of motor vehicle parts and accessories**
- 45.31 Wholesale trade of motor vehicle parts and accessories**

- 45.31.1 Wholesale trade of motor vehicle parts
- 45.31.2 Wholesale trade of motor vehicle accessories
- 45.32 Retail trade of motor vehicle parts and accessories**
- 45.32.1 Retail trade of motor vehicle parts
- 45.32.2 Retail trade of motor vehicle accessories
- 45.4 Sale, maintenance and repair of motorcycles and related parts and accessories**
- 45.40 Sale, maintenance and repair of motorcycles and related parts and accessories**
- 45.40.1 Sale motorcycles and mopeds including parts and accessories
- 45.40.2 Maintenance and repair services of motorcycles and mopeds

- 46 Wholesale trade, except of motor vehicles and motorcycles**
- 46.1 Wholesale on a fee or contract basis**
- 46.11 Agents involved in the sale of agricultural raw materials, live animals, textile raw materials and semi-finished goods**
- 46.11.1 Agents involved in the sale of agricultural raw materials, live animals, textile raw materials and semi-finished goods
- 46.12 Agents involved in the sale of fuels, ores, metals and industrial chemicals**
- 46.12.1 Agents involved in the sale of fuels, ores, metals and industrial chemicals
- 46.13 Agents involved in the sale of timber and building materials**
- 46.13.1 Agents involved in the sale of timber and building materials
- 46.14 Agents involved in the sale of machinery, industrial equipment, ships and aircraft**
- 46.14.1 Agents involved in the sale of machinery, industrial equipment, ships and aircraft
- 46.15 Agents involved in the sale of furniture, household goods, hardware and ironmongery**
- 46.15.1 Agents involved in the sale of furniture, household goods, hardware and ironmongery
- 46.16 Agents involved in the sale of textiles, clothing, fur, footwear and leather goods**
- 46.16.1 Agents involved in the sale of textiles, clothing, fur, footwear and leather goods
- 46.17 Agents involved in the sale of food, beverages and tobacco**
- 46.17.1 Agents involved in the sale of food, beverages and tobacco
- 46.18 Agents specialized in the sale of other particular products**
- 46.18.1 Agents specialised in the sale of other particular products
- 46.19 Agents involved in the sale of a variety of goods**
- 46.19.1 Agents involved in the sale of a variety of goods
- 46.2 Wholesale of agricultural raw materials and live animals**
- 46.21 Wholesale of grain, unmanufactured tobacco, seeds and animal feeds**
- 46.21.1 Wholesale of cereals and seeds
- 46.21.2 Wholesale of feed for farm animals
- 46.21.3 Wholesale of unmanufactured tobacco
- 46.22 Wholesale of flowers and plants**
- 46.22.1 Wholesale of flowers and plants
- 46.23 Wholesale of live animals**
- 46.23.1 Wholesale of live animals
- 46.24 Wholesale of hides, skins and leather**
- 46.24.1 Wholesale of hides, skins and leather
- 46.3 Wholesale of food, beverages and tobacco**
- 46.31 Wholesale of fruit and vegetables**
- 46.31.1 Packing and export of unprocessed fruit and vegetables
- 46.31.2 Marketing associations for fruit and vegetables in the home market
- 46.31.3 Fruit and vegetable brokers

- 46.31.4 Wholesale of nuts
- 46.32 Wholesale of meat and meat products**
- 46.32.1 Wholesale of meat and meat products
- 46.33 Wholesale of dairy products, eggs and edible oils and fats**
- 46.33.1 Wholesale of dairy products, eggs and edible oils and fats
- 46.34 Wholesale of beverages**
- 46.34.1 Wholesale of alcoholic and other beverages
- 46.35 Wholesale of tobacco products**
- 46.35.1 Wholesale of tobacco products
- 46.36 Wholesale of sugar and chocolate and sugar confectionery**
- 46.36.1 Wholesale of sugar and chocolate and sugar confectionery (incl. bakery products)
- 46.37 Wholesale of coffee, tea, cocoa and spices**
- 46.37.1 Wholesale of coffee, tea, cocoa and spices
- 46.38 Wholesale of other food, including fish, crustaceans and molluscs**
- 46.38.1 Wholesale of fish, crustaceans and molluscs
- 46.38.2 Wholesale of other food n.e.c. (e.g feed for pet animals, feed for babies, dietetic food, etc.)
- 46.39 Non-specialized wholesale of food, beverages and tobacco**
- 46.39.1 Non- specialised wholesale of food, beverages and tobacco
- 46.4 Wholesale of household goods**
- 46.41 Wholesale of textiles**
- 46.41.1 Wholesale of textiles (e.g fabrics, yarn, household linen, sewing thread, etc.)
- 46.42 Wholesale of clothing and footwear**
- 46.42.1 Wholesale of clothing (incl. sports clothes, gloves, ties, fur articles and underwear)
- 46.42.2 Wholesale of footwear
- 46.43 Wholesale of electrical household appliances**
- 46.43.1 Wholesale of electrical household appliances and radio and television goods
- 46.43.2 Wholesale of gramophone records, tapes, CDs and videos
- 46.43.3 Wholesale of photographic and optical goods
- 46.43.4 Wholesale trade of electronic cigarettes
- 46.44 Wholesale of china and glassware and cleaning materials**
- 46.44.1 Wholesale of china, glassware and cleaning materials
- 46.45 Wholesale of perfume and cosmetics**
- 46.45.1 Wholesale of perfume and cosmetics
- 46.46 Wholesale of pharmaceutical goods**
- 46.46.1 Wholesale of pharmaceutical goods
- 46.47 Wholesale of furniture, carpets and lighting equipment**
- 46.47.1 Wholesale of furniture and carpets
- 46.47.2 Wholesale of lighting equipment
- 46.48 Wholesale of watches and jewellery**
- 46.48.1 Wholesale of watches and jewellery
- 46.49 Wholesale of other household goods**
- 46.49.1 Wholesale of stationery, books, magazines and newspapers
- 46.49.2 Wholesale of sport goods
- 46.49.3 Wholesale of bicycles and their parts and accessories
- 46.49.4 Wholesale of non- electrical household appliances
- 46.49.5 Wholesale of other household goods
- 46.49.6 Wholesale of leather goods and travel accessories

- 46.5 Wholesale of information and communication equipment**
- 46.51 Wholesale of computers, computer peripheral equipment and software**
 - 46.51.1 Wholesale of computers, computer peripheral equipment and software
- 46.52 Wholesale of electronic and telecommunications equipment and parts**
 - 46.52.1 Wholesale of electronic and telecommunications equipment and parts
- 46.6 Wholesale of other machinery, equipment and supplies**
- 46.61 Wholesale of agricultural machinery, equipment and supplies**
 - 46.61.1 Wholesale of agricultural machinery and accessories and implements, including tractors
- 46.62 Wholesale of machine tools**
 - 46.62.1 Wholesale of machine tools
- 46.63 Wholesale of mining, construction and civil engineering machinery**
 - 46.63.1 Wholesale of mining, construction and civil engineering machinery
- 46.64 Wholesale of machinery for the textile industry and of sewing and knitting machines**
 - 46.64.1 Wholesale of machinery for the textile industry and of sewing and knitting machines
- 46.65 Wholesale of office furniture**
 - 46.65.1 Wholesale of office furniture
- 46.66 Wholesale of other office machinery and equipment**
 - 46.66.1 Wholesale of other office machinery and equipment
- 46.69 Wholesale of other machinery and equipment**
 - 46.69.1 Wholesale of installation equipment for domestic use
 - 46.69.2 Wholesale of other machinery for use in industry, trade and navigation
- 46.7 Other specialized wholesale**
- 46.71 Wholesale of solid, liquid and gaseous fuels and related products**
 - 46.71.1 Wholesale of solid, liquid and gaseous fuels and related products
- 46.72 Wholesale of metals and metal ores**
 - 46.72.1 Wholesale of metals and metal ores
- 46.73 Wholesale of wood, construction materials and sanitary equipment**
 - 46.73.1 Wholesale of wood
 - 46.73.2 Wholesale of sanitary equipment
 - 46.73.3 Wholesale of paints and varnishes
 - 46.73.4 Wholesale of flat glasses and mirrors
 - 46.73.5 Wholesale of gypsum decorations
 - 46.73.6 Wholesale of wallpaper and floor coverings
 - 46.73.9 Wholesale of various construction materials
- 46.74 Wholesale of hardware, plumbing and heating equipment and supplies**
 - 46.74.1 Wholesale of plumbing and heating equipment and supplies
 - 46.74.2 Wholesale of hardware and handtools (e.g hammers, saws, screwdrivers, etc.)
- 46.75 Wholesale of chemical products**
 - 46.75.1 Wholesale of chemical products, chemicals in primary forms, fertilisers, agrochemical products and other industrial chemicals
- 46.76 Wholesale of other intermediate products**
 - 46.76.1 Wholesale of other intermediate products
- 46.77 Wholesale of waste and scrap**
 - 46.77.1 Wholesale of waste and scrap and materials for recycling
- 46.9 Non-specialized wholesale trade**
- 46.90 Non-specialized wholesale trade**
 - 46.90.1 Wholesale of a variety of goods without any particular specialisation
 - 46.90.9 Other wholesale trade n.e.c.

- 47 Retail trade, except of motor vehicles and motorcycles**
- 47.1 Retail sale in non-specialized stores**
- 47.11 Retail sale in non-specialized stores with food, beverages or tobacco predominating**
 - 47.11.1 Groceries and super- markets selling a large variety of goods, of which food products, beverages or tobacco are predominant
 - 47.11.2 Kiosks
- 47.19 Other retail sale in non-specialized stores**
 - 47.19.1 Retail sale of a large variety of goods of which food products, beverages or tobacco should not be predominant
 - 47.19.2 Retail sale of a large variety of goods including furniture, appliances, wearing apparel, hardware, cosmetics, jewellery, toys, sports
- 47.2 Retail sale of food, beverages and tobacco in specialized stores**
- 47.21 Retail sale of fruit and vegetables in specialized stores**
 - 47.21.1 Retail sale of fruit and vegetables
- 47.22 Retail sale of meat and meat products in specialized stores**
 - 47.22.1 Retail sale of meat and meat products including poultry
- 47.23 Retail sale of fish, crustaceans and molluscs in specialized stores**
 - 47.23.1 Retail sale of fish, crustaceans and molluscs
- 47.24 Retail sale of bread, cakes, flour confectionery and sugar confectionery in specialized stores**
 - 47.24.1 Retail sale of bread, rolls and similar products of bakery
 - 47.24.2 Retail sale of cakes, flour confectionery, sugar confectionery
- 47.25 Retail sale of beverages in specialized stores**
 - 47.25.1 Retail sale of alcoholic and other beverages (incl. tea, coffee)
- 47.26 Retail sale of tobacco products in specialized stores**
 - 47.26.1 Retail sale of tobacco products
- 47.29 Other retail sale of food in specialized stores**
 - 47.29.1 Retail sale of dairy products
 - 47.29.9 Other retail sale of food, beverages and tobacco in specialized stores n.e.c.(e.g. dry nuts)
- 47.3 Retail sale of automotive fuel in specialized stores**
- 47.30 Retail sale of automotive fuel in specialized stores**
 - 47.30.1 Retail sale of automotive fuel (petrol stations) and retail sale of automotive lubricants
- 47.4 Retail sale of information and communication equipment in specialized stores**
- 47.41 Retail sale of computers, peripheral units and software in specialized stores**
 - 47.41.1 Retail sale of computers, peripheral units and software incl. videogames
- 47.42 Retail sale of telecommunications equipment in specialized stores**
 - 47.42.1 Retail sale of telecommunication equipment (e.g telephone, telex, etc.)
- 47.43 Retail sale of audio and video equipment in specialized stores**
 - 47.43.1 Retail sale of radio and television goods
- 47.5 Retail sale of other household equipment in specialized stores**
- 47.51 Retail sale of textiles in specialized stores**
 - 47.51.1 Retail sale of fabrics
 - 47.51.2 Retail sale of household textiles
 - 47.51.3 Retail sale of haberdashery and basic materials for rug, tapestry or embroidery making
- 47.52 Retail sale of hardware, paints and glass in specialized stores**
 - 47.52.1 Retail sale of sanitary equipment
 - 47.52.2 Retail sale of paints, varnishes and lacquers

- 47.52.3 Retail sale of locks, tools, mirrors, iron, cement, etc.
- 47.52.4 Retail sale of wood
- 47.52.9 Retail trade of other construction materials
- 47.53 Retail sale of carpets, rugs, wall and floor coverings in specialized stores**
- 47.53.1 Retail sale of curtains, carpets, rugs, wall and floor coverings
- 47.54 Retail sale of electrical household appliances in specialized stores**
- 47.54.1 Retail sale of electrical household appliances
- 47.59 Retail sale of furniture, lighting equipment and other household articles in specialized stores**
- 47.59.1 Retail sale of furniture
- 47.59.2 Retail sale of articles of lighting
- 47.59.3 Retail sale of embroideries and other products of cottage industry, glassware and non electrical household appliances
- 47.59.4 Retail sale of musical instruments and scores
- 47.59.5 Picture framing
- 47.59.9 Other retail sale of furniture, lighting equipment and household articles n.e.c.
- 47.6 Retail sale of cultural and recreation goods in specialized stores**
- 47.61 Retail sale of books in specialized stores**
- 47.61.1 Retail sale of books
- 47.62 Retail sale of newspapers and stationery in specialized stores**
- 47.62.1 Retail sale of newspapers and stationery
- 47.63 Retail sale of music and video recordings in specialized stores**
- 47.63.1 Retail sale of music and video recordings, CDs and DVDs
- 47.64 Retail sale of sporting equipment in specialized stores**
- 47.64.1 Retail sale of sports goods, bicycles, fishing goods, camping and hunting equipment
- 47.65 Retail sale of games and toys in specialized stores**
- 47.65.1 Retail sale of games and toys excluding videogames
- 47.7 Retail sale of other goods in specialized stores**
- 47.71 Retail sale of clothing in specialized stores**
- 47.71.1 Retail sale of clothing
- 47.71.2 Retail sale of underwear, nightwear, etc.
- 47.72 Retail sale of footwear and leather goods in specialized stores**
- 47.72.1 Retail sale of footwear
- 47.72.2 Retail sale of leather goods and travel accessories
- 47.73 Dispensing chemist in specialized stores**
- 47.73.1 Pharmacies
- 47.74 Retail sale of medical and orthopaedic goods in specialized stores**
- 47.74.1 Retail sale of medical and orthopaedic goods
- 47.75 Retail sale of cosmetic and toilet articles in specialized stores**
- 47.75.1 Retail sale of cosmetic and toilet articles
- 47.76 Retail sale of flowers, plants, seeds, fertilizers, pet animals and pet food in specialized stores**
- 47.76.1 Retail sale of flowers and plants
- 47.76.2 Retail sale of fertilisers, seeds, pet and animals and pet food
- 47.77 Retail sale of watches and jewellery in specialized stores**
- 47.77.1 Retail sale of watches, clocks and jewellery
- 47.78 Other retail sale of new goods in specialized stores**
- 47.78.1 Retail sale of photographic and optical goods

- 47.78.2 Retail sale of souvenirs, craftwork and religious articles
- 47.78.3 Retail sale of bottled gas and petroleum, coal and fuel wood
- 47.78.4 Retail sale of commercial art galleries
- 47.78.9 Other retail trade in specialized stores n.e.c.
- 47.79 Retail sale of second-hand goods in stores**
- 47.79.1 Retail sale of antiques
- 47.79.2 Retail sale of other second- hand goods
- 47.79.3 Activities of auctioning houses (retail)
- 47.8 Retail sale via stalls and markets**
- 47.81 Retail sale via stalls and markets of food, beverages and tobacco products**
- 47.81.1 Retail sale via stalls and markets of food, beverages and tobacco products
- 47.82 Retail sale via stalls and markets of textiles, clothing and footwear**
- 47.82.1 Retail sale via stalls and markets of textiles, clothing and footwear
- 47.89 Retail sale via stalls and markets of other goods**
- 47.89.1 Retail sale via stalls and markets of other goods (except food, beverages, tobacco, textiles, clothing and footwear)
- 47.9 Retail trade not in stores, stalls or markets**
- 47.91 Retail sale via mail order houses or via Internet**
- 47.91.1 Retail sale via mail order houses and internet
- 47.99 Other retail sale not in stores, stalls or markets**
- 47.99.1 Retail sale of food products by mobile sellers
- 47.99.2 Retail sale of textiles, wearing apparel, footwear and embroideries by mobile sellers
- 47.99.3 Retail sale of cassettes, records, electric household goods and similar items by mobile sellers
- 47.99.4 Retail sale of drinking water by mobile sellers
- 47.99.5 Lottery- ticket sellers
- 47.99.6 Newspaper hawkers
- 47.99.7 Retail sale by door- to- door sales persons
- 47.99.9 Other retail sale not in stores, stalls or markets

H TRANSPORTATION AND STORAGE

- 49 Land transport and transport via pipelines**
- 49.1 Passenger rail transport, interurban**
- 49.10 Passenger rail transport, interurban**
- 49.10.1 Passenger rail transport, interurban
- 49.2 Freight rail transport**
- 49.20 Freight rail transport**
- 49.20.1 Freight rail transport
- 49.3 Other passenger land transport**
- 49.31 Urban and suburban passenger land transport**
- 49.31.1 Urban bus transport
- 49.31.2 Interurban bus transport
- 49.31.3 Rural bus transport
- 49.31.4 Interurban taxi transport
- 49.32 Taxi operation**
- 49.32.1 Urban taxi transport
- 49.32.2 Rural taxi transport

- 49.39 Other passenger land transport n.e.c.**
- 49.39.1 Buses «on contract» and tourist buses
- 49.39.2 Transport of passengers by animals
- 49.4 Freight transport by road and removal services**
- 49.41 Freight transport by road**
- 49.41.1 Freight transport by road (lorries)
- 49.41.2 Freight transport by other means
- 49.42 Removal services**
- 49.42.1 Removal services
- 49.5 Transport via pipeline**
- 49.50 Transport via pipeline**
- 49.50.1 Transport via pipeline

- 50 Water transport**
- 50.1 Sea and coastal passenger water transport**
- 50.10 Sea and coastal passenger water transport**
- 50.10.1 Sea and coastal passenger water transport
- 50.10.2 Operation of excursion and sightseeing boats (coastwise)
- 50.2 Sea and coastal freight water transport**
- 50.20 Sea and coastal freight water transport**
- 50.20.1 Sea and coastal freight water transport
- 50.3 Inland passenger water transport**
- 50.30 Inland passenger water transport**
- 50.30.1 Inland passenger water transport
- 50.4 Inland freight water transport**
- 50.40 Inland freight water transport**
- 50.40.1 Inland freight water transport

- 51 Air transport**
- 51.1 Passenger air transport**
- 51.10 Passenger air transport**
- 51.10.1 Transport of passengers by air
- 51.2 Freight air transport and space transport**
- 51.21 Freight air transport**
- 51.21.1 Transport of freight by air
- 51.22 Space transport**
- 51.22.1 Space transport

- 52 Warehousing and support activities for transportation**
- 52.1 Warehousing and storage**
- 52.10 Warehousing and storage**
- 52.10.1 Cold storage services
- 52.10.2 Bonded warehouses
- 52.10.3 Other storage and warehousing
- 52.2 Support activities for transportation**
- 52.21 Service activities incidental to land transportation**
- 52.21.1 Parking lot operation
- 52.21.2 Towing of motor vehicles and roadside assistance

- 52.21.3 Other supporting land transport activities n.e.c.
- 52.22 Service activities incidental to water transportation**
- 52.22.1 Ports Authority
- 52.22.2 Navigation, pilotage and ship salvage activities
- 52.23 Service activities incidental to air transportation**
- 52.23.1 Civil Aviation Department (operation of airports)
- 52.23.2 Fire Service (Airports)
- 52.23.3 Operation of airports
- 52.23.9 Other supporting air transport activities n.e.c.
- 52.24 Cargo handling**
- 52.24.1 Loading and unloading of cargo or passenger luggage
- 52.24.2 Stevedoring (with cranes and fork-lifts)
- 52.29 Other transportation support activities**
- 52.29.1 Activities of shipping agencies
- 52.29.2 Activities of customs agents
- 52.29.3 Services of packing and forwarding goods abroad

- 53 Postal and courier activities**
- 53.1 Postal activities under universal service obligation**
- 53.10 Postal activities under universal service obligation**
- 53.10.1 Postal Services Department
- 53.2 Other postal and courier activities**
- 53.20 Other postal and courier activities**
- 53.20.1 Courier activities and other than government post activities

I ACCOMMODATION AND FOOD SERVICE ACTIVITIES

- 55 Accommodation**
- 55.1 Hotels and similar accommodation**
- 55.10 Hotels and similar accommodation**
- 55.10.1 Hotels
- 55.10.2 Hotel Apartments (with hotel services)
- 55.2 Holiday and other short-stay accommodation**
- 55.20 Holiday and other short-stay accommodation**
- 55.20.1 Provision of short- stay lodging in holiday chalets, cottages and flats (without hotel services)
- 55.20.2 Youth hostels
- 55.20.3 Mountain refuges
- 55.3 Camping grounds, recreational vehicle parks and trailer parks**
- 55.30 Camping grounds, recreational vehicle parks and trailer parks**
- 55.30.1 Camping sites, including caravan sites
- 55.9 Other accommodation**
- 55.90 Other accommodation**
- 55.90.1 Other accommodation

- 56 Food and beverage service activities**
- 56.1 Restaurants and mobile food service activities**
- 56.10 Restaurants and mobile food service activities**

- 56.10.1 Restaurants and taverns
- 56.10.2 Fast food outlets and take away restaurants
- 56.10.3 Ice cream parlours
- 56.10.4 Mobile stands selling food of immediate consumption
- 56.10.5 Other restaurants n.e.c.
- 56.2 Event catering and other food service activities**
- 56.21 Event catering activities**
- 56.21.1 Event catering activities
- 56.29 Other food service activities**
- 56.29.1 Activities of sports, factories, offices and hospitals canteens
- 56.29.2 Activities of schools canteens
- 56.29.3 Other activities of food service contractors (airtransport companies)
- 56.3 Beverage serving activities**
- 56.30 Beverage serving activities**
- 56.30.1 Coffee shops
- 56.30.2 Bars and pubs
- 56.30.3 Night clubs and discotheques
- 56.30.4 Cafeterias
- 56.30.9 Other beverage serving activities n.e.c. (e.g. fresh juice and coffee for take-away, etc.)

J INFORMATION AND COMMUNICATION

- 58 Publishing activities**
- 58.1 Publishing of books, periodicals and other publishing activities**
- 58.11 Book publishing**
- 58.11.1 Publishing of books, dictionaries and encyclopaedias
- 58.12 Publishing of directories and mailing lists**
- 58.12.1 Publishing of brochures, leaflets and similar publications, maps, etc.
- 58.13 Publishing of newspapers**
- 58.13.1 Publishing of daily newspapers (published at least 4 times a week)
- 58.14 Publishing of journals and periodicals**
- 58.14.1 Publishing of journals, periodicals and newspapers (published less than 4 times a week)
- 58.19 Other publishing activities**
- 58.19.1 Other publishing including timetables, posters, postcards, etc.
- 58.2 Software publishing**
- 58.21 Publishing of computer games**
- 58.21.1 Publishing of computer games
- 58.29 Other software publishing**
- 58.29.1 Other software publishing

- 59 Motion picture, video and television programme production, sound recording and music publishing activities**
- 59.1 Motion picture, video and television programme activities**
- 59.11 Motion picture, video and television programme production activities**
- 59.11.1 Production of motion pictures on film
- 59.11.2 Production of motion pictures on video tapes and television programmes (incl. advertisements)
- 59.12 Motion picture, video and television programme post-production activities**

- 59.12.1 Motion picture, video and television programme post- production activities
- 59.13 Motion picture, video and television programme distribution activities**
- 59.13.1 Motion picture and video distribution
- 59.14 Motion picture projection activities**
- 59.14.1 Motion picture projection
- 59.2 Sound recording and music publishing activities**
- 59.20 Sound recording and music publishing activities**
- 59.20.1 Publishing of gramophone records, CD`s, DVD discs and tapes with music or other sound recordings
- 59.20.2 Activities of sound- recording studios

- 60 Programming and broadcasting activities**
- 60.1 Radio broadcasting**
- 60.10 Radio broadcasting**
- 60.10.1 Cyprus Broadcasting Corporation (CBC) - radio
- 60.10.2 Cyprus private radio broadcasting stations
- 60.10.3 Foreign radio and broadcasting stations
- 60.2 Television programming and broadcasting activities**
- 60.20 Television programming and broadcasting activities**
- 60.20.1 Cyprus Broadcasting Corporation (CBC)- Television
- 60.20.2 Cyprus private television broadcasting stations
- 60.20.3 Foreign television broadcasting stations
- 60.20.4 Cable television broadcasting

- 61 Telecommunications**
- 61.1 Wired telecommunications activities**
- 61.10 Wired telecommunications activities**
- 61.10.1 Cyprus Telecommunications Authority
- 61.2 Wireless telecommunications activities**
- 61.20 Wireless telecommunications activities**
- 61.20.1 Internet access provision
- 61.20.2 Internet cafes and other internet services n.e.c.
- 61.3 Satellite telecommunications activities**
- 61.30 Satellite telecommunications activities**
- 61.30.1 Satellite telecommunications activities
- 61.9 Other telecommunications activities**
- 61.90 Other telecommunications activities**
- 61.90.1 Other telecommunications activities

- 62 Computer programming, consultancy and related activities**
- 62.0 Computer programming, consultancy and related activities**
- 62.01 Computer programming activities**
- 62.01.1 Design and programming of systems ready to use, made- to- order software based on orders from specific users and web- page design
- 62.02 Computer consultancy activities**
- 62.02.1 Hardware consultancy
- 62.03 Computer facilities management activities**
- 62.03.1 Computer facilities management activities

62.09 Other information technology and computer service activities

62.09.1 Other computer related activities

63 Information service activities

63.1 Data processing, hosting and related activities; web portals

63.11 Data processing, hosting and related activities

63.11.1 Data processing

63.12 Web portals

63.12.1 Database activities

63.9 Other information service activities

63.91 News agency activities

63.91.1 News agency activities

63.99 Other information service activities n.e.c.

63.99.1 Other information service activities n.e.c.

K FINANCIAL AND INSURANCE ACTIVITIES

64 Financial service activities, except insurance and pension funding

64.1 Monetary intermediation

64.11 Central banking

64.11.1 Activities of the Central Bank of Cyprus

64.19 Other monetary intermediation

64.19.1 Activities of commercial banks

64.19.2 Activities of co- operative credit societies

64.19.3 Activities of co- operative saving banks

64.19.4 Activities of the Home Finance Organization

64.19.5 Activities of the Cyprus Development Bank

64.19.9 Activities of other monetary intermediation n.e.c.

64.2 Activities of holding companies

64.20 Activities of holding companies

64.20.1 Activities of holding companies

64.3 Trusts, funds and similar financial entities

64.30 Trusts, funds and similar financial entities

64.30.1 Trusts, funds and similar financial entities

64.9 Other financial service activities, except insurance and pension funding

64.91 Financial leasing

64.91.1 Financial leasing

64.92 Other credit granting

64.92.1 Other credit granting

64.99 Other financial service activities, except insurance and pension funding n.e.c.

64.99.1 Other financial intermediation n.e.c.(factoring)

65 Insurance, reinsurance and pension funding, except compulsory social security

65.1 Insurance

65.11 Life insurance

65.11.1 Life insurance

65.12 Non-life insurance

65.12.1 Agricultural Insurance Organization

- 65.12.2 Other non- life insurance
- 65.12.3 Medical fund
- 65.2 Reinsurance**
- 65.20 Reinsurance**
- 65.20.1 Reinsurance
- 65.3 Pension funding**
- 65.30 Pension funding**
- 65.30.1 Pension and provident funding

- 66 Activities auxiliary to financial services and insurance activities**
- 66.1 Activities auxiliary to financial services, except insurance and pension funding**
- 66.11 Administration of financial markets**
- 66.11.1 Activities of stock exchanges, commodity exchanges, etc.
- 66.11.2 Administration and monitoring of financial markets
- 66.12 Security and commodity contracts brokerage**
- 66.12.1 Security broking and fund management
- 66.12.2 Bureau de change
- 66.19 Other activities auxiliary to financial services, except insurance and pension funding**
- 66.19.1 Mortgage brokers
- 66.19.9 Activities auxiliary to financial intermediation n.e.c.
- 66.2 Activities auxiliary to insurance and pension funding**
- 66.21 Risk and damage evaluation**
- 66.21.1 Activities of insurance risk and damage evaluators
- 66.22 Activities of insurance agents and brokers**
- 66.22.1 Activities of life insurance agents
- 66.22.2 Activities of other insurance agents- except life insurance
- 66.29 Other activities auxiliary to insurance and pension funding**
- 66.29.1 Other activities auxiliary to insurance and pension funding
- 66.3 Fund management activities**
- 66.30 Fund management activities**
- 66.30.1 Fund management activities

L REAL ESTATE ACTIVITIES

- 68 Real estate activities**
- 68.1 Buying and selling of own real estate**
- 68.10 Buying and selling of own real estate**
- 68.10.1 Buying and selling of own real estate
- 68.2 Renting and operating of own or leased real estate**
- 68.20 Renting and operating of own or leased real estate**
- 68.20.1 Letting of own property
- 68.3 Real estate activities on a fee or contract basis**
- 68.31 Real estate agencies**
- 68.31.1 Real estate agencies
- 68.31.2 Appraisal services in real estates
- 68.32 Management of real estate on a fee or contract basis**
- 68.32.1 Management of real estate on a fee or contract basis

M	PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES
69	Legal and accounting activities
69.1	Legal activities
69.10	Legal activities
69.10.1	Barristers
69.10.2	Notaries
69.10.9	Other legal activities n.e.c
69.2	Accounting, bookkeeping and auditing activities; tax consultancy
69.20	Accounting, bookkeeping and auditing activities; tax consultancy
69.20.1	Accounting, book- keeping and auditing activities; tax consultancy
70	Activities of head offices; management consultancy activities
70.1	Activities of head offices
70.10	Activities of head offices
70.10.1	Management activities of holding companies
70.2	Management consultancy activities
70.21	Public relations and communication activities
70.21.1	Public relation and communication activities
70.22	Business and other management consultancy activities
70.22.1	Business and management consultancy activities
71	Architectural and engineering activities; technical testing and analysis
71.1	Architectural and engineering activities and related technical consultancy
71.11	Architectural activities
71.11.1	Architectural activities
71.11.2	Architectural draftsmen
71.12	Engineering activities and related technical consultancy
71.12.1	Civil engineering activities
71.12.2	Geological Survey Department
71.12.9	Other architectural and engineering activities and related technical consultancy
71.2	Technical testing and analysis
71.20	Technical testing and analysis
71.20.1	State General Laboratory
71.20.9	Other technical testing and analysis (e.g pollution, food hygiene, M.O.T for motor vehicles, etc.)
72	Scientific research and development
72.1	Research and experimental development on natural sciences and engineering
72.11	Research and experimental development on biotechnology
72.11.1	Research and experimental development on biotechnology
72.19	Other research and experimental development on natural sciences and engineering
72.19.1	Agricultural Research Institute
72.19.9	Other research and experimental development of natural sciences and engineering n.e.c.
72.2	Research and experimental development on social sciences and humanities
72.20	Research and experimental development on social sciences and humanities
72.20.1	Research and experimental development on social sciences and humanities
72.20.9	Other research and experimental development of social sciences and humanities n.e.c.

73	Advertising and market research
73.1	Advertising
73.11	Advertising agencies
73.11.1	Advertising agencies
73.11.9	Other advertising activities
73.12	Media representation
73.12.1	Media representation
73.2	Market research and public opinion polling
73.20	Market research and public opinion polling
73.20.1	Market research and public opinion polling
74	Other professional, scientific and technical activities
74.1	Specialised design activities
74.10	Specialized design activities
74.10.1	Fashion design related to textiles, wearing apparel, shoes, jewellery, furniture, etc.
74.10.2	Services of graphic designers
74.10.3	Activities of interior decoration designers
74.2	Photographic activities
74.20	Photographic activities
74.20.1	Photographic activities (studios)
74.20.2	Activities of photojournalists
74.3	Translation and interpretation activities
74.30	Translation and interpretation activities
74.30.1	Translation and interpretation activities
74.9	Other professional, scientific and technical activities n.e.c.
74.90	Other professional, scientific and technical activities n.e.c.
74.90.1	Activities of agents of entertainment or sports attractions
74.90.2	Appraisal activities other than for real estate and insurance
74.90.3	Meteorological Service
74.90.4	Activities of quantity surveyors
74.90.5	Activities of consultants' security, agronomy, environmental and other technical consulting other than architecture, engineering and management consultants
74.90.9	Other professional, scientific and technical activities n.e.c.
75	Veterinary activities
75.0	Veterinary activities
75.00	Veterinary activities
75.00.1	Veterinary Services
75.00.2	Private veterinary activities
N	ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES
77	Rental and leasing activities
77.1	Renting and leasing of motor vehicles
77.11	Renting and leasing of cars and light motor vehicles
77.11.1	Renting and leasing of automobiles without driver (saloon)
77.12	Renting and leasing of trucks

- 77.12.1 Renting and leasing of trucks without driver
- 77.12.2 Renting and leasing of buses without driver
- 77.2 Renting and leasing of personal and household goods**
- 77.21 Renting and leasing of recreational and sports goods**
- 77.21.1 Renting and leasing of bicycles
- 77.21.2 Renting of recreational and sports equipment
- 77.21.3 Renting of beach chairs and umbrellas
- 77.22 Renting of video tapes and disks**
- 77.22.1 Renting of video tapes and records (video clubs)
- 77.29 Renting and leasing of other personal and household goods**
- 77.29.1 Renting of textiles, wearing apparel and footwear
- 77.29.9 Renting of other personal and household goods n.e.c.
- 77.3 Renting and leasing of other machinery, equipment and tangible goods**
- 77.31 Renting and leasing of agricultural machinery and equipment**
- 77.31.1 Renting of agricultural machinery and equipment (without operator)
- 77.32 Renting and leasing of construction and civil engineering machinery and equipment**
- 77.32.1 Renting of construction and civil engineering machinery and equipment
- 77.33 Renting and leasing of office machinery and equipment (including computers)**
- 77.33.1 Renting of office machinery and equipment including computers
- 77.34 Renting and leasing of water transport equipment**
- 77.34.1 Renting of water transport equipment (without operator)
- 77.35 Renting and leasing of air transport equipment**
- 77.35.1 Renting of air transport equipment (without operator)
- 77.39 Renting and leasing of other machinery, equipment and tangible goods n.e.c.**
- 77.39.1 Renting and leasing of motorcycles without driver
- 77.39.9 Renting of other machinery, equipment and tangible goods n.e.c.
- 77.4 Leasing of intellectual property and similar products, except copyrighted works**
- 77.40 Leasing of intellectual property and similar products, except copyrighted works**
- 77.40.1 Leasing of intellectual property and similar products, except copyrighted works

- 78 Employment activities**
- 78.1 Activities of employment placement agencies**
- 78.10 Activities of employment placement agencies**
- 78.10.1 Labour recruitment of personnel (private)
- 78.2 Temporary employment agency activities**
- 78.20 Temporary employment agency activities**
- 78.20.1 Temporary employment agency activities
- 78.3 Other human resources provision**
- 78.30 Other human resources provision**
- 78.30.1 Other human resources provision

- 79 Travel agency, tour operator reservation service and related activities**
- 79.1 Travel agency and tour operator activities**
- 79.11 Travel agency activities**
- 79.11.1 Activities of travel agencies
- 79.12 Tour operator activities**
- 79.12.1 Activities of tour operators
- 79.9 Other reservation service and related activities**

79.90	Other reservation service and related activities
79.90.1	Activities of tourist guides
79.90.9	Other reservation service and related activities
80	Security and investigation activities
80.1	Private security activities
80.10	Private security activities
80.10.1	Private security activities
80.2	Security systems service activities
80.20	Security systems service activities
80.20.1	Security systems service activities
80.3	Investigation activities
80.30	Investigation activities
80.30.1	Investigation activities
81	Services to buildings and landscape activities
81.1	Combined facilities support activities
81.10	Combined facilities support activities
81.10.1	Combined facilities support activities
81.2	Cleaning activities
81.21	General cleaning of buildings
81.21.1	General cleaning of buildings
81.22	Other building and industrial cleaning activities
81.22.1	Other building and industrial cleaning activities, e.g window cleaning except carpet and curtain cleaning
81.29	Other cleaning activities
81.29.1	Other cleaning activities
81.3	Landscape service activities
81.30	Landscape service activities
81.30.1	Landscape service activities
82	Office administrative, office support and other business support activities
82.1	Office administrative and support activities
82.11	Combined office administrative service activities
82.11.1	Combined office administrative service activities
82.19	Photocopying, document preparation and other specialized office support activities
82.19.1	Photocopying, document preparation and other specialized office support activities
82.2	Activities of call centres
82.20	Activities of call centres
82.20.1	Call centre activities
82.3	Organisation of conventions and trade shows
82.30	Organisation of conventions and trade shows
82.30.1	Organisation of conventions and trade shows
82.9	Business support service activities n.e.c.
82.91	Activities of collection agencies and credit bureaus
82.91.1	Activities of collection agencies and credit bureaus
82.92	Packaging activities
82.92.1	Packaging activities

82.99 Other business support service activities n.e.c.

82.99.1 Other business support service activities n.e.c.

O PUBLIC ADMINISTRATION AND DEFENCE; COMPULSORY SOCIAL SECURITY

84 Public administration and defence; compulsory social security

84.1 Administration of the State and the economic and social policy of the community

84.11 General public administration activities

84.11.1 Independent Government Services (Presidency and Presidential Palace, Council of Ministers, House of Representatives, Audit Office, Planning Bureau, Office of the Commissioner for Administration (Ombudsman), Office for the Commissioner of Personal Character Data Protection, Internal Audit Service, Office of the Commissioner for State Aid Control, Public Service Commission, Educational Service Commission, Tender Review Body, Refugees' Review Body)

84.11.2 Ministry of Finance (Administration), Statistical Service, Inland Revenue Department, Customs and Excise, Value Added Tax Service, Main Tender Board, Treasury, Department of Government Purchases and Supplies, Department of Public Administration and Personnel (incl. Citizen's Service Desks)

84.11.3 Municipalities (administration)

84.11.4 Community Boards

84.11.5 Activities of other Services, non- profit Organisations and Institutions for the public welfare n.e.c. (e.g. Cyprus Research Promotion Foundation, European Institute of Cyprus)

84.12 Regulation of the activities of providing health care, education, cultural services and other social services, excluding social security

84.12.1 Ministry of Education and Culture (Administration, Technical Services, Educational Psychology Service and Ministry Storehouse)

84.12.2 Ministry of Health (Administration), Medical and Public Health Services (Administration), Pharmaceutical Services. Health Insurance Organisation

84.12.3 Cyprus State Scholarship Authority

84.12.4 Cyprus Radio- Television Authority

84.12.5 School committees

84.12.6 Activities of the Cultural Services (Ministry of Education and Culture)

84.12.8 Activities of the Cyprus Athletic Organization

84.13 Regulation of and contribution to more efficient operation of businesses

84.13.1 Ministry of Agriculture, Natural Resources and Environment (Administration), Departments of Agriculture, Forestry, Fisheries and Marine Research, Land Consolidation, Water Development (Administration), Mines, Environmental Service. Cyprus Agricultural Payments Organisation

84.13.2 Ministry of the Interior (Administration), Civil Registry and Migration, District Administration (excl. Construction work), Lands and Surveys, Town Planning and Housing, Press and Information Office, Asylum Service, T/C Properties Management Service

84.13.3 Ministry of Commerce, Industry and Tourism (Administration), Cottage and Handicraft Service, Commerce and Industry Services, Department of Registrar of Companies and Official Receiver. Competition Protection Commission, Co-operative Societies' Supervision and Development Authority, Cyprus Organisation for Storage and Management of Oil Stocks (COSMOS)

- 84.13.4 Ministry of Labour and Social Insurance (Administration), Labour Department, Department of Labour Relations, Department of Labour Inspection
- 84.13.5 Ministry of Communication and Works (Administration), Department of Electronic Communications, Merchant Shipping Department, Road Transport Department, Electrical and Mechanical Services Department, Department of Control. Hire Purchase Section, Office of the Commissioner of Electronic Communications and Postal Regulation, Cyprus Energy Regulatory Authority, Council of Building and Civil Engineering Contractors, Cyprus Scientific and Technical Chamber (ETEK).
- 84.13.6 Government Printing Office, Department of Information Technology Services
- 84.13.7 Wine Products Council
- 84.13.8 Cyprus Tourism Organization
- 84.2 Provision of services to the community as a whole**
- 84.21 Foreign affairs**
- 84.21.1 Ministry of Foreign Affairs (Administration, Foreign Services)
- 84.22 Defence activities**
- 84.22.1 Ministry of Defence (incl. Administration, Cyprus Army and National Guard)
- 84.22.2 Civil Defence
- 84.23 Justice and judicial activities**
- 84.23.1 Law Office (incl. Office of the Law Commissioner)
- 84.23.2 Judicial (Supreme, District, Military, Family Courts, etc.)
- 84.23.3 Prisons
- 84.24 Public order and safety activities**
- 84.24.1 Ministry of Justice and Public Order (administration)
- 84.24.2 Police (excl. Police Academy)
- 84.25 Fire service activities**
- 84.25.1 Fire Service (excl. Airports Fire Service)
- 84.3 Compulsory social security activities**
- 84.30 Compulsory social security activities**
- 84.30.1 Social Insurance Services

P EDUCATION

- 85 Education**
- 85.1 Pre-primary education**
- 85.10 Pre-primary education**
- 85.10.1 Kindergartens (public)
- 85.10.2 Kindergartens (private)
- 85.10.3 Kindergartens (communal)
- 85.2 Primary education**
- 85.20 Primary education**
- 85.20.1 Elementary schools (public)
- 85.20.2 Elementary schools (private)
- 85.20.3 Special schools (for the blind, deaf, etc.)
- 85.3 Secondary education**
- 85.31 General secondary education**
- 85.31.1 Gymnasiums (public)
- 85.31.2 Lycea (public)
- 85.31.3 Gymnasiums and Lycea together (public)

- 85.31.4 Gymnasiums (private)
- 85.31.5 Lycea (private)
- 85.31.6 Gymnasiums and Lycea together (private)
- 85.31.7 Special schools (for the blind, deaf, etc.)
- 85.32 Technical and vocational secondary education**
- 85.32.1 Technical and vocational schools- secondary education (public)
- 85.32.2 Technical and vocational schools- secondary education (private)
- 85.32.3 Special schools (for the blind, deaf, etc.)
- 85.4 Higher education**
- 85.41 Post-secondary non- tertiary education**
- 85.41.9 Other schools and institutes of higher education n.e.c. (incl. colleges with educational programmes of a total duration less than 2 years)
- 85.42 Tertiary education**
- 85.42.1 Public Universities (University of Cyprus, Open University of Cyprus, Cyprus University of Technology)
- 85.42.2 Private Universities
- 85.42.9 Other tertiary education n.e.c. (e.g. Mediterranean Institute of Management (MIM), Cyprus International Institute of Management (CIIM), Forestry College, Cyprus Higher Hotel Institute, Police Academy, etc.)
- 85.5 Other education**
- 85.51 Sports and recreation education**
- 85.51.1 Schools for sports education
- 85.52 Cultural education**
- 85.52.1 Music schools
- 85.52.2 Dancing schools
- 85.52.3 Theatre schools
- 85.52.9 Other cultural education n.e.c.
- 85.53 Driving school activities**
- 85.53.1 Automobile driving schools
- 85.53.2 Flying, sailing and shipping schools
- 85.59 Other education n.e.c.**
- 85.59.1 State Upgrading Institutes
- 85.59.2 Pedagogical Institute
- 85.59.3 Vocational Rehabilitation Centre for the Disabled
- 85.59.4 Productivity Centre
- 85.59.5 Cyprus Academy of Public Administration
- 85.59.6 Institute of foreign languages
- 85.59.7 Human Resource Development Authority
- 85.59.9 Other adult education n.e.c. (e.g seminars for adults, etc.)
- 85.6 Educational support activities**
- 85.60 Educational support activities**
- 85.60.1 Educational support activities

Q HUMAN HEALTH AND SOCIAL WORK ACTIVITIES

- 86 Human health activities**
- 86.1 Hospital activities**
- 86.10 Hospital activities**

- 86.10.1 Hospitals (public and private), incl. Hospital for mental illness
- 86.10.2 Private clinics
- 86.10.3 The Cyprus Institute of Neurology and Genetics
- 86.2 Medical and dental practice activities**
- 86.21 General medical practice activities**
- 86.21.1 Hospital out- patient clinics
- 86.21.2 Private medical practitioners- General physician
- 86.22 Specialist medical practice activities**
- 86.22.1 Private medical. Special physician
- 86.23 Dental practice activities**
- 86.23.1 Dental Services Department
- 86.23.2 Private dentists
- 86.9 Other human health activities**
- 86.90 Other human health activities**
- 86.90.1 Medical laboratories
- 86.90.2 Physiotherapists
- 86.90.3 Dieticians, psychologists, logotherapists
- 86.90.4 Saint Charalambos Home, Arodafnousa Nursing Centre, etc.
- 86.90.5 Public sanitary services and centres
- 86.90.9 Other human health activities n.e.c.

- 87 Residential care activities**
- 87.1 Residential nursing care activities**
- 87.10 Residential nursing care activities**
- 87.10.1 Residential nursing care activities
- 87.2 Residential care activities for mental retardation, mental health and substance abuse**
- 87.20 Residential care activities for mental retardation, mental health and substance abuse**
- 87.20.1 Centres for people with substance abuse problems
- 87.3 Residential care activities for the elderly and disabled**
- 87.30 Residential care activities for the elderly and disabled**
- 87.30.1 Homes for the aged
- 87.9 Other residential care activities**
- 87.90 Other residential care activities**
- 87.90.1 Special boarding homes and hostels with accommodation
- 87.90.2 Youth hostels of welfare services
- 87.90.9 Other social work activities with accommodation

- 88 Social work activities without accommodation**
- 88.1 Social work activities without accommodation for the elderly and disabled**
- 88.10 Social work activities without accommodation for the elderly and disabled**
- 88.10.1 Social Welfare Services
- 88.10.2 Service for the Care and Rehabilitation of Displaced Persons
- 88.10.3 Special boarding homes and hostels without accommodation
- 88.10.4 Department of Social Inclusion of Persons with Disabilities
- 88.9 Other social work activities without accommodation**
- 88.91 Child day-care activities**
- 88.91.1 Day nurseries
- 88.91.2 Child day- care activities

- 88.99 Other social work activities without accommodation n.e.c.**
- 88.99.1 Charity and welfare societies
- 88.99.2 Societies for the protection of the elderly, handicapped, etc.
- 88.99.9 Other social work activities without accommodation

R ARTS, ENTERTAINMENT AND RECREATION

90 Creative, arts and entertainment activities

90.0 Creative, arts and entertainment activities

90.01 Performing arts

- 90.01.1 Cyprus Theatrical Organization
- 90.01.2 Private theatrical productions and related activities
- 90.01.3 Activities of groups, orchestras, bands, musicians and composers
- 90.01.4 Activities of artists such as singers, dancers, mimes, etc.
- 90.01.9 Other activities of performing arts n.e.c.

90.02 Support activities to performing arts

- 90.02.1 Support activities to performing arts

90.03 Artistic creation

- 90.03.1 Activities of individual artists such as authors, poets and novelists
- 90.03.2 Activities of painters, sculptors, engravers, etc.
- 90.03.3 Activities of independent journalists
- 90.03.4 Restoring of works of art
- 90.03.9 Other activities of literary creation and interpretation n.e.c.

90.04 Operation of arts facilities

- 90.04.1 Operation of arts facilities

91 Libraries, archives, museums and other cultural activities

91.0 Libraries, archives, museums and other cultural activities

91.01 Library and archives activities

- 91.01.1 Activities of the State Archives Department
- 91.01.2 Activities of public libraries
- 91.01.3 Activities of the libraries of the local authorities
- 91.01.4 Activities of private libraries
- 91.01.9 Activities of cultural centres

91.02 Museums activities

- 91.02.1 Operation of government museums and Antiquities Department
- 91.02.2 Operation of non- government museums
- 91.02.3 Operation of art galleries

91.03 Operation of historical sites and buildings and similar visitor attractions

- 91.03.1 Operation and preservation of historical sites and buildings.

91.04 Botanical and zoological gardens and nature reserves activities

- 91.04.1 Botanical and zoological gardens and nature reserves activities

92 Gambling and betting activities

92.0 Gambling and betting activities

92.00 Gambling and betting activities

- 92.00.1 Betting and gambling activities
- 92.00.2 Sale of lottery tickets

92.00.3 Other gambling and betting activities n.e.c.

93 Sports activities and amusement and recreation activities

93.1 Sports activities

93.11 Operation of sports facilities

93.11.1 Operation of sports arenas and stadiums (incl. Swimming pools)

93.12 Activities of sport clubs

93.12.1 Activities of sports clubs

93.13 Fitness facilities

93.13.1 Fitness and body-building and facilities

93.19 Other sports activities

93.19.1 Activities of athletic organizations

93.19.2 Activities of the race track (incl. horse training)

93.19.9 Other sporting activities n.e.c.

93.2 Amusement and recreation activities

93.21 Activities of amusement parks and theme parks

93.21.1 Fair and amusement park activities

93.29 Other amusement and recreation activities

93.29.1 Marine facilities for boats and yachts

93.29.2 Other amusement and recreation activities n.e.c.

93.29.9 Other recreational activities n.e.c.

S OTHER SERVICE ACTIVITIES

94 Activities of membership organisations

94.1 Activities of business, employers and professional membership organizations

94.11 Activities of business and employers membership organizations

94.11.1 Activities of business and employers membership organizations

94.12 Activities of professional membership organizations

94.12.1 Activities of professional membership organizations

94.2 Activities of trade unions

94.20 Activities of trade unions

94.20.1 Activities of trade unions

94.9 Activities of other membership organizations

94.91 Activities of religious organizations

94.91.1 Activities of bishoprics

94.91.2 Activities of churches

94.91.3 Activities of monasteries

94.91.9 Activities of other religious organizations

94.92 Activities of political organizations

94.92.1 Activities of political organizations (incl. Young people`s auxiliaries associated with a political party)

94.99 Activities of other membership organizations n.e.c.

94.99.1 Activities of parents associations

94.99.9 Other activities of membership associations n.e.c.

95 Repair of computers and personal and household goods

95.1 Repair of computers and communication equipment

- 95.11** **Repair of computers and peripheral equipment**
- 95.11.1 Repair of computers and peripheral equipment
- 95.12** **Repair of communication equipment**
- 95.12.1 Repair of communication equipment
- 95.2** **Repair of personal and household goods**
- 95.21** **Repair of consumer electronics**
- 95.21.1 Repair of radios, television sets and other similar audio and visual appliances
- 95.22** **Repair of household appliances and home and garden equipment**
- 95.22.1 Repair of household appliances and home and garden equipment
- 95.23** **Repair of footwear and leather goods**
- 95.23.1 Repair of boots, shoes and other articles of leather
- 95.24** **Repair of furniture and home furnishings**
- 95.24.1 Repair of furniture and home furnishings
- 95.25** **Repair of watches, clocks and jewellery**
- 95.25.1 Repair of watches, clocks and jewellery
- 95.29** **Repair of other personal and household goods**
- 95.29.1 Maintenance and repair services of musical instruments
- 95.29.2 Repair of bicycles
- 95.29.9 Repair of personal or household goods n.e.c.

- 96** **Other personal service activities**
- 96.0** **Other personal service activities**
- 96.01** **Washing and (dry-)cleaning of textile and fur products**
- 96.01.1 Dry cleaning
- 96.01.2 Laundries
- 96.01.3 Carpet and rug shampooing and drapery and curtain cleaning
- 96.01.4 Pressing of all Kinds of clothing
- 96.01.5 Laundry collection and delivery
- 96.02** **Hairdressing and other beauty treatment**
- 96.02.1 Barbers
- 96.02.2 Hairdressing saloons
- 96.02.3 Beauty parlours (incl. pedicures and manicures)
- 96.02.4 Services of trichologists
- 96.03** **Funeral and related activities**
- 96.03.1 Undertaking activities
- 96.03.2 Grave care and similar services
- 96.03.3 Embalming services
- 96.03.4 Renting or sale of graves
- 96.04** **Physical well-being activities**
- 96.04.1 Activities of physical well-being institutes
- 96.09** **Other personal service activities n.e.c.**
- 96.09.1 Other personal service activities n.e.c.

T **ACTIVITIES OF HOUSEHOLDS AS EMPLOYERS; UNDIFFERENTIATED GOODS- AND SERVICES-PRODUCING ACTIVITIES OF HOUSEHOLDS FOR OWN USE**

- 97** **Activities of households as employers of domestic personnel**

- 97.0** **Activities of households as employers of domestic personnel**
- 97.00** **Activities of households as employers of domestic personnel**
- 97.00.1 Private households with employed persons such as maids, cleaners, gardeners, etc.

- 98** **Undifferentiated goods- and services-producing activities of private households for own use**
- 98.1** **Undifferentiated goods-producing activities of private households for own use**
- 98.10** **Undifferentiated goods-producing activities of private households for own use**
- 98.10.1 Undifferentiated goods producing activities of private households for own use
- 98.2** **Undifferentiated service-producing activities of private households for own use**
- 98.20** **Undifferentiated service-producing activities of private households for own use**
- 98.20.1 Undifferentiated services producing activities of private households for own use

- U** **ACTIVITIES OF EXTRATERRITORIAL ORGANISATIONS AND BODIES**

- 99** **Activities of extraterritorial organisations and bodies**
- 99.0** **Activities of extraterritorial organizations and bodies**
- 99.00** **Activities of extraterritorial organizations and bodies**
- 99.00.1 Activities of extraterritorial organizations and bodies

Annex 9.II – CPA 2008 as used in Cyprus

A PRODUCTS OF AGRICULTURE, FORESTRY AND FISHING

01 Products of agriculture, hunting and related services

- 01.1 Non-perennial crops
- 01.2 Perennial crops
- 01.3 Planting material: live plants, bulbs, tubers and roots, cuttings and slips; mushroom spawn
- 01.4 Live animals and animal products
- 01.6 Agricultural and animal husbandry services (except veterinary services)
- 01.7 Hunting and trapping and related services

02 Products of forestry, logging and related services

- 02.1 Forest trees and nursery services
- 02.2 Wood in the rough
- 02.3 Wild growing non-wood products
- 02.4 Support services to forestry

03 Fish and other fishing products; aquaculture products; support services to fishing

- 03.0 Fish and other fishing products; aquaculture products; support services to fishing

B MINING AND QUARRYING

05 Coal and lignite

- 05.1 Hard coal
- 05.2 Lignite

06 Crude petroleum and natural gas

- 06.1 Crude petroleum
- 06.2 Natural gas, liquefied or in gaseous state

07 Metal ores

- 07.1 Iron ores
- 07.2 Non-ferrous metal ores

08 Other mining and quarrying products

- 08.1 Stone, sand and clay
- 08.9 Mining and quarrying products n.e.c.

09 Mining support services

- 09.1 Support services to petroleum and natural gas extraction
- 09.9 Support services to other mining and quarrying

C MANUFACTURED PRODUCTS

- 10 Food products**
 - 10.1 Preserved meat and meat products
 - 10.2 Processed and preserved fish, crustaceans and molluscs
 - 10.3 Processed and preserved fruit and vegetables
 - 10.4 Vegetable and animal oils and fats
 - 10.5 Dairy products
 - 10.6 Grain mill products, starches and starch products
 - 10.7 Bakery and farinaceous products
 - 10.8 Other food products
 - 10.9 Prepared animal feeds
- 11 Beverages**
 - 11.0 Beverages
- 12 Tobacco products**
 - 12.0 Tobacco products
- 13 Textiles**
 - 13.1 Textile yarn and thread
 - 13.2 Woven textiles
 - 13.3 Textile finishing services
 - 13.9 Other textiles
- 14 Wearing apparel**
 - 14.1 Wearing apparel, except fur apparel
 - 14.2 Articles of fur
 - 14.3 Knitted and crocheted apparel
- 15 Leather and related products**
 - 15.1 Tanned and dressed leather; luggage, handbags, saddlery and harness; dressed and dyed fur
 - 15.2 Footwear
- 16 Wood and of products of wood and cork, except furniture; articles of straw and plaiting materials**
 - 16.1 Wood, sawn and planed
 - 16.2 Products of wood, cork, straw and plaiting materials
- 17 Paper and paper products**
 - 17.1 Pulp, paper and paperboard
 - 17.2 Articles of paper and paperboard
- 18 Printing and recording services**
 - 18.1 Printing services and services related to printing
 - 18.2 Reproduction services of recorded media
- 19 Coke and refined petroleum products**
 - 19.1 Coke oven products

- 19.2 Refined petroleum products

- 20 Chemicals and chemical products**
- 20.1 Basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms
- 20.2 Pesticides and other agrochemical products
- 20.3 Paints, varnishes and similar coatings, printing ink and mastics
- 20.4 Soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations
- 20.5 Other chemical products
- 20.6 Man-made fibres

- 21 Basic pharmaceutical products and pharmaceutical preparations**
- 21.1 Basic pharmaceutical products
- 21.2 Pharmaceutical preparations
- 22 Rubber and plastics products**
- 22.1 Rubber products
- 22.2 Plastics products

- 23 Other non-metallic mineral products**
- 23.1 Glass and glass products
- 23.2 Refractory products
- 23.3 Clay building materials
- 23.4 Other porcelain and ceramic products
- 23.5 Cement, lime and plaster
- 23.6 Articles of concrete, cement and plaster
- 23.7 Cut, shaped and finished stone
- 23.9 Other non-metallic mineral products

- 24 Basic metals**
- 24.1 Basic iron and steel and ferro-alloys
- 24.2 Tubes, pipes, hollow profiles and related fittings, of steel
- 24.3 Other products of the first processing of steel
- 24.4 Basic precious and other non-ferrous metals
- 24.5 Casting services of metals

- 25 Fabricated metal products, except machinery and equipment**
- 25.1 Structural metal products
- 25.2 Tanks, reservoirs and containers of metal
- 25.3 Steam generators, except central heating hot water boilers
- 25.4 Weapons and ammunition
- 25.5 Forging, pressing, stamping and roll-forming services of metal; powder metallurgy
- 25.6 Treatment and coating services of metals; machining
- 25.7 Cutlery, tools and general hardware
- 25.9 Other fabricated metal products

- 26 Computer, electronic and optical products**
- 26.1 Electronic components and boards
- 26.2 Computers and peripheral equipment
- 26.3 Communication equipment

- 26.4 Consumer electronics
- 26.5 Measuring, testing and navigating equipment; watches and clocks
- 26.6 Irradiation, electromedical and electrotherapeutic equipment
- 26.7 Optical instruments and photographic equipment
- 26.8 Magnetic and optical media

- 27 Electrical equipment**
- 27.1 Electric motors, generators, transformers and electricity distribution and control apparatus
- 27.2 Batteries and accumulators
- 27.3 Wiring and wiring devices
- 27.4 Electric lighting equipment
- 27.5 Domestic appliances
- 27.9 Other electrical equipment

- 28 Machinery and equipment n.e.c.**
- 28.1 General-purpose machinery
- 28.2 Other general-purpose machinery
- 28.3 Agricultural and forestry machinery
- 28.4 Metal forming machinery and machine tools
- 28.9 Other special-purpose machinery

- 29 Motor vehicles, trailers and semi-trailers**
- 29.1 Motor vehicles
- 29.2 Bodies (coachwork) for motor vehicles; trailers and semi-trailers
- 29.3 Parts and accessories for motor vehicles

- 30 Other transport equipment**
- 30.1 Ships and boats
- 30.2 Railway locomotives and rolling stock
- 30.3 Air and spacecraft and related machinery
- 30.4 Military fighting vehicles
- 30.9 Transport equipment n.e.c.

- 31 Furniture**
- 31.0 Furniture

- 32 Other manufactured goods**
- 32.1 Jewellery, bijouterie and related articles
- 32.2 Musical instruments
- 32.3 Sports goods
- 32.4 Games and toys
- 32.5 Medical and dental instruments and supplies
- 32.9 Manufactured goods n.e.c.

- 33 Repair and installation services of machinery and equipment**
- 33.1 Repair services of fabricated metal products, machinery and equipment
- 33.2 Installation services of industrial machinery and equipment

D ELECTRICITY, GAS, STEAM AND AIR CONDITIONING

35 Electricity, gas, steam and air conditioning

35.1 Electricity, transmission and distribution services

35.2 Manufactured gas; distribution services of gaseous fuels through mains

35.3 Steam and air conditioning supply services

E WATER SUPPLY; SEWERAGE, WASTE MANAGEMENT AND REMEDIATION SERVICES

36 Natural water; water treatment and supply services

36.0 Natural water; water treatment and supply services

37 Sewerage services; sewage sludge

37.0 Sewerage services; sewage sludge

38 Waste collection, treatment and disposal services; materials recovery services

38.1 Waste; waste collection services

38.2 Waste treatment and disposal services

38.3 Materials recovery services; secondary raw materials

39 Remediation services and other waste management services

39.0 Remediation services and other waste management services

F CONSTRUCTIONS AND CONSTRUCTION WORKS

41 Buildings and building construction works

41.0 Buildings and building construction works

42 Constructions and construction works for civil engineering

42.1 Roads and railways; construction works for roads and railways

42.2 Constructions and construction works for utility projects

42.9 Constructions and construction works for other civil engineering projects

43 Specialised construction works

43.1 Demolition and site preparation works

43.2 Electrical, plumbing and other construction installation works

43.3 Building completion and finishing works

43.9 Other specialised construction works

WHOLESALE AND RETAIL TRADE SERVICES;

G REPAIR SERVICES OF MOTOR VEHICLES AND MOTORCYCLES

45 Wholesale and retail trade and repair services of motor vehicles and motorcycles

45.1 Trade services of motor vehicles

45.2 Maintenance and repair services of motor vehicles

45.3 Trade services of motor vehicle parts and accessories

45.4 Trade, maintenance and repair services of motorcycles and related parts and accessories

46 Wholesale trade services, except of motor vehicles and motorcycles

46.1 Wholesale trade services on a fee or contract basis

46.2 Wholesale trade services of agricultural raw materials and live animals

46.3 Wholesale trade services of food, beverages and tobacco

46.4 Wholesale trade services of household goods

46.5 Wholesale trade services of information and communication equipment

46.6 Wholesale trade services of other machinery, equipment and supplies

46.7 Other specialised wholesale trade services

46.9 Non-specialised wholesale trade services

47 Retail trade services, except of motor vehicles and motorcycles

47.0 Retail trade services, except of motor vehicles and motorcycles

H TRANSPORTATION AND STORAGE SERVICES

49 Land transport services and transport services via pipelines

49.1 Passenger rail transport services, interurban

49.2 Freight rail transport services

49.3 Other passenger land transport services

49.41 Freight transport services by road

49.42 Removal services

49.5 Transport services via pipeline

50 Water transport services

50.1 Sea and coastal passenger water transport services

50.2 Sea and coastal freight water transport services

50.3 Inland passenger water transport services

50.4 Inland freight water transport services

51 Air transport services

51.1 Passenger air transport services

51.2 Freight air transport and space transport services

52 Warehousing and support services for transportation

52.1 Warehousing and storage services

52.2 Support services for transportation

53 Postal and courier services

53.1 Postal services under universal service obligation

53.2 Other postal and courier services

I ACCOMMODATION AND FOOD SERVICES

55 Accommodation services

55.1 Hotel and similar accommodation services

55.2 Holiday and other short stay accommodation services

55.3 Camping ground, recreational vehicle park and trailer park services

55.9 Other accommodation services

56 Food and beverage serving services

56.1 Restaurant and mobile food serving services

56.2 Event catering services and other food serving services

56.3 Beverage serving services

J INFORMATION AND COMMUNICATION SERVICES

58 Publishing services

58.1 Publishing services of books, periodicals and other publishing services

58.2 Software publishing services

59 Motion picture, video and television programme production services, sound recording and music publishing

59.1 Motion picture, video and television programme services

59.2 Sound recording and music publishing services

60 Programming and broadcasting services

60.1 Radio broadcasting services

60.2 Television programming and broadcasting services; broadcasting originals

61 Telecommunications services

61.1 Wired telecommunications services

61.2 Wireless telecommunications services

61.3 Satellite telecommunications services

61.9 Other telecommunications services

62 Computer programming, consultancy and related services

62.0 Computer programming, consultancy and related services

63 Information services

63.1 Data processing, hosting and related services; web portals

63.9 Other information services

K FINANCIAL AND INSURANCE SERVICES

64 Financial services, except insurance and pension funding

64.1A Monetary intermediation services - non FISIM

64.1B Monetary intermediation services - FISIM

64.2 Services of holding companies

64.3 Services of trusts, funds and similar financial entities

64.9 Other financial services, except insurance and pension funding

65 Insurance, reinsurance and pension funding services, except compulsory social security

- 65.1 Insurance services
- 65.2 Reinsurance services
- 65.3 Pension funding services

- 66 Services auxiliary to financial services and insurance services**
- 66.1 Services auxiliary to financial services, except insurance and pension funding
- 66.2 Services auxiliary to insurance and pension funding
- 66.3 Fund management services

- L REAL ESTATE SERVICES**

- 68 Real estate services**
- 68.1 Buying and selling services of own real estate
- 68.2A Rental and operating services of own or leased real estate - imputed rentals
- 68.2B Rental and operating services of own or leased real estate - actual rentals
- 68.3 Real estate services on a fee or contract basis

- M PROFESSIONAL, SCIENTIFIC AND TECHNICAL SERVICES**

- 69 Legal and accounting services**
- 69.1 Legal services
- 69.2 Accounting, bookkeeping and auditing services; tax consulting services

- 70 Services of head offices; management consulting services**
- 70.1 Services of head offices
- 70.2 Management consulting services

- 71 Architectural and engineering services; technical testing and analysis services**
- 71.1 Architectural and engineering services and related technical consulting services
- 71.2 Technical testing and analysis services

- 72 Scientific research and development services**
- 72.1 Research and experimental development services in natural sciences and engineering
- 72.2 Research and experimental development services in social sciences and humanities

- 73 Advertising and market research services**
- 73.1 Advertising services
- 73.2 Market research and public opinion polling services

- 74 Other professional, scientific and technical services**
- 74.1 Specialised design services
- 74.2 Photographic services
- 74.3 Translation and interpretation services
- 74.9 Other professional, scientific and technical services n.e.c.
- 75 Veterinary services**
- 75.0 Veterinary services

N ADMINISTRATIVE AND SUPPORT SERVICES

77 Rental and leasing services

- 77.1 Rental and leasing services of motor vehicles
- 77.2 Rental and leasing services of personal and household goods
- 77.3 Rental and leasing services of other machinery, equipment and tangible goods
- 77.4 Licensing services for the right to use intellectual property and similar products, except copyrighted works

78 Employment services

- 78.1 Services provided by employment placement agencies
- 78.2 Temporary employment agency services
- 78.3 Other human resources provision services

79 Travel agency, tour operator and other reservation services and related services

- 79.1 Travel agency and tour operator services
- 79.9 Other reservation services and related services

80 Security and investigation services

- 80.1 Private security services
- 80.2 Security systems services
- 80.3 Investigation services

81 Services to buildings and landscape

- 81.1 Combined facilities support services
- 81.2 Cleaning services
- 81.3 Landscape services

82 Office administrative, office support and other business support services

- 82.1 Office administrative and support services
- 82.2 Call centre services
- 82.3 Convention and trade show organisation services
- 82.9 Business support services n.e.c.

PUBLIC ADMINISTRATION AND DEFENCE SERVICES;

O COMPULSORY SOCIAL SECURITY SERVICES

84 Public administration and defence services; compulsory social security services

- 84.1 Administration services of the State and the economic and social policy of the community
- 84.2 Provision of services to the community as a whole
- 84.3 Compulsory social security services

P EDUCATION SERVICES

85 Education services

- 85.1 Pre-primary education services
- 85.2 Primary education services

- 85.3 Secondary education services
- 85.4 Higher education services
- 85.5 Other education services
- 85.6 Educational support services

Q HUMAN HEALTH AND SOCIAL WORK SERVICES

86 Human health services

- 86.1 Hospital services
- 86.2 Medical and dental practice services
- 86.9 Other human health services

87 Residential care services

- 87.1 Residential nursing care services
- 87.2 Residential care services for mental retardation, mental health and substance abuse
- 87.3 Residential care services for the elderly and disabled
- 87.9 Other residential care services

88 Social work services without accommodation

- 88.1 Social work services without accommodation for the elderly and disabled
- 88.9 Other social work services without accommodation

R ARTS, ENTERTAINMENT AND RECREATION SERVICES

90 Creative, arts and entertainment services

- 90.0 Creative, arts and entertainment services

91 Library, archive, museum and other cultural services

- 91.0 Library, archive, museum and other cultural services

92 Gambling and betting services

- 92.0 Gambling and betting services

93 Sporting services and amusement and recreation services

- 93.1 Sporting services
- 93.2 Amusement and recreation services

OTHER SERVICES

94 Services furnished by membership organisations

- 94.1 Services furnished by business, employers and professional membership organisations
- 94.2 Services furnished by trade unions
- 94.9 Services furnished by other membership organisations

95 Repair services of computers and personal and household goods

- 95.1 Repair services of computers and communication equipment
- 95.2 Repair services of personal and household goods

96 Other personal services

96.0 Other personal services

**T SERVICES OF HOUSEHOLDS AS EMPLOYERS;
UNDIFFERENTIATED GOODS AND SERVICES PRODUCED
BY HOUSEHOLDS FOR OWN USE**

97 Services of households as employers of domestic personnel

97.0 Services of households as employers of domestic personnel

98 Undifferentiated goods and services produced by private households for own use

98.1 Undifferentiated goods produced by private households for own use

98.2 Undifferentiated services produced by private households for own use

U SERVICES PROVIDED BY EXTRATERRITORIAL ORGANISATIONS AND BODIES

99 Services provided by extraterritorial organisations and bodies

99.0 Services provided by extraterritorial organisations and bodies

Annex 9.III – COICOP as used in Cyprus

01 FOOD AND NON-ALCOHOLIC BEVERAGES

01.1 FOOD

- 01.1.1 Bread and cereals
- 01.1.2 Meat (minced meat is included for all types of meat)
- 01.1.3 Fish and seafood
- 01.1.4 Milk, cheese and eggs
- 01.1.5 Oils and fats
- 01.1.6 Fruit
- 01.1.7 Vegetables
- 01.1.8 Sugar, jam, honey, chocolate and confectionery
- 01.1.9 Food products n.e.c

01.2 NON-ALCOHOLIC BEVERAGES

- 01.2.1 Coffee, tea and cocoa
- 01.2.2 Mineral waters, soft drinks, fruit and vegetable juices

01.9 FOOD PRODUCTS UNSPECIFIED

- 01.9.9 Food products unspecified

02 ALCOHOLIC BEVERAGES AND TOBACCO

02.1 ALCOHOLIC BEVERAGES

- 02.1.1 Spirits
- 02.1.2 Wine
- 02.1.3 Beer

02.2 TOBACCO

- 02.2.0 Tobacco

02.3 NARCOTICS

- 02.3.0 Narcotics

03 CLOTHING AND FOOTWEAR

03.1 CLOTHING

- 03.1.1 Clothing materials
- 03.1.2 Garments
- 03.1.3 Other articles of clothing
- 03.1.4 Cleaning, repair and hire of clothing

03.2 FOOTWEAR

- 03.2.1 Shoes and other footwear
- 03.2.2 Repair and hire of footwear

04 HOUSING, WATER, ELECTRICITY, GAS AND OTHER FUELS

04.1 ACTUAL RENTALS FOR HOUSING

- 04.1.1 Actual rentals paid by tenants (S)
- 04.1.2 Other actual rentals

04.2 IMPUTED RENTALS FOR HOUSING

- 04.2.1 Imputed rentals of owner-occupiers
- 04.2.2 Other imputed rentals

04.3 MAINTENANCE AND REPAIR OF THE DWELLING

- 04.3.1 Materials for the maintenance and repair of the dwelling
- 04.3.2 Services for the maintenance and repair of the dwelling

04.4 WATER SUPPLY AND MISCELLANEOUS SERVICES RELATING TO THE DWELLING

- 04.4.1 Water supply
- 04.4.2 Refuse collection
- 04.4.3 Sewerage collection
- 04.4.4 Other services relating to the dwelling n.e.c.

04.5 ELECTRICITY, GAS AND OTHER FUELS

- 04.5.1 Electricity
- 04.5.2 Gas
- 04.5.3 Liquid fuels
- 04.5.4 Solid fuels
- 04.5.5 Heat energy

05 FURNISHINGS, HOUSEHOLD EQUIPMENT AND ROUTINE HOUSEHOLD MAINTENANCE

05.1 FURNITURE AND FURNISHINGS, CARPETS, LIGHTING, OTHER FLOOR COVERINGS AND REPAIRS

- 05.1.1 Furniture and furnishings
- 05.1.2 Carpets and other floor coverings
- 05.1.3 Repair of furniture and furnishings and floor coverings

05.2 HOUSEHOLD TEXTILES

- 05.2.0 Household textiles

05.3 HOUSEHOLD APPLIANCES

- 05.3.1 Major household appliances whether electric or not
- 05.3.2 Small electric household appliances
- 05.3.3 Repair of household appliances

05.4 GLASSWARE, TABLEWARE AND HOUSEHOLD UTENSILS

- 05.4.0 Glassware and household utensils

05.5 TOOLS AND EQUIPMENT FOR HOUSE AND GARDEN

- 05.5.1 Major tools and equipment
- 05.5.2 Small tools and miscellaneous accessories

05.6 GOODS AND SERVICES FOR ROUTINE HOUSEHOLD MAINTENANCE

- 05.6.1 Non-durable household goods

05.6.2 Domestic and household services

06 HEALTH

06.1 MEDICAL PRODUCTS, APPLIANCES AND EQUIPMENT

06.1.1 Pharmaceutical products

06.1.2 Other medical products

06.1.3 Therapeutic appliances and equipment

06.2 OUT-PATIENT SERVICES

06.2.1 Medical services

06.2.2 Dental services

06.2.3 Paramedical services

06.3 HOSPITAL SERVICES

06.3.0 Hospital services

07 TRANSPORT

07.1 PURCHASE OF VEHICLES

07.1.1 Motor cars

07.1.2 Motor cycles

07.1.3 Bicycles

07.1.4 Animal drawn vehicles

07.2 OPERATION OF PERSONAL TRANSPORT EQUIPMENT

07.2.1 Spare parts and accessories purchased by the household

07.2.2 Fuels and lubricants for personal transport equipment

07.2.3 Maintenance and repair of personal transport equipment

07.2.4 Other services in respect of personal transport equipment

07.3 TRANSPORT SERVICES

07.3.1 Passenger transport by railway

07.3.2 Passenger transport by road

07.3.3 Passenger transport by air

07.3.4 Passenger transport by sea and inland waterway

07.3.5 Combined passenger transport

07.3.6 Other purchased transport services

08 COMMUNICATION

08.1 POSTAL SERVICES

08.1.0 Postal services

08.2 TELEPHONE AND TELEFAX EQUIPMENT

08.2.0 Telephone and telefax equipment

08.3 TELEPHONE AND TELEFAX SERVICES

08.3.0 Telephone and telefax services

09 RECREATION AND CULTURE

09.1 AUDIO-VISUAL, PHOTOGRAPHIC AND INFORMATION PROCESSING EQUIPMENT

- 09.1.1 Equipment for the reception, recording and reproduction of sound and picture
- 09.1.2 Photographic and cinematographic equipment and optical instruments
- 09.1.3 Information processing equipment
- 09.1.4 Recording media
- 09.1.5 Repair of audio-visual, photographic and information processing equipment

09.2 OTHER MAJOR DURABLES FOR RECREATION AND CULTURE

- 09.2.1 Major durables for outdoor recreation
- 09.2.2 Musical instruments and major durables for indoor recreation
- 09.2.3 Maintenance and repair of other major durables for recreation and culture

09.3 OTHER RECREATIONAL ITEMS AND EQUIPMENT, GARDENS AND PETS

- 09.3.1 Games, toys and hobbies
- 09.3.2 Equipment for sport, camping and open air recreation
- 09.3.3 Gardens, plants and flowers
- 09.3.4 Pets and related products
- 09.3.5 Veterinary and other services for pets

09.4 RECREATIONAL AND CULTURAL SERVICES

- 09.4.1 Recreational and sporting services
- 09.4.2 Cultural services
- 09.4.3 Games of chance

09.5 NEWSPAPERS, BOOKS AND STATIONARY

- 09.5.1 Books
- 09.5.2 Newspapers and periodicals
- 09.5.3 Miscellaneous printer matter
- 09.5.4 Stationary and drawing materials

09.6 PACKAGE HOLIDAYS

- 09.6.0 Package holidays

10 EDUCATION

10.1 PRE-PRIMARY AND PRIMARY EDUCATION

- 10.1.0 Pre-primary and primary education

10.2 SECONDARY EDUCATION

- 10.2.0 Secondary education

10.3 POST-SECONDARY NON-TERTIARY EDUCATION

- 10.3.0 Post-secondary non-tertiary education

10.4 TERTIARY EDUCATION

- 10.4.0 Tertiary education

10.5 EDUCATION NOT DEFINABLE BY LEVEL

10.5.0 Education not definable by level

11 RESTAURANTS AND HOTELS

11.1 CATERING SERVICES

11.1.1 Restaurants, cafes and like

11.1.2 Canteens

11.2 ACCOMMODATION SERVICES

11.2.0 Accommodation services

12 MISCELLANEOUS GOODS AND SERVICES

12.1 PERSONAL CARE

12.1.1 Hairdressing saloons and personal grooming establishments

12.1.2 Electrical appliances for personal care

12.1.3 Other appliances, articles and products for personal care

12.2 PROSTITUTION

12.2.0 Prostitution

12.3 PERSONAL EFFECTS N.E.C.

12.3.1 Jewellery, clocks and watches

12.3.2 Other personal effects

12.4 SOCIAL PROTECTION

12.4.0 Social protection services

12.5 INSURANCE

12.5.1 Life insurance

12.5.2 Insurance connected with the dwelling

12.5.3 Insurance connected with health

12.5.4 Insurance connected with transport

12.5.5 Other insurance

12.6 FINANCIAL SERVICES N.E.C

12.6.1 Financial intermediation services indirectly measured

12.6.2 Other financial services n.e.c

12.7 OTHER SERVICES N.E.C

12.7.0 Other services n.e.c

Annex 9.IV - COPNI as used in Cyprus

Code	COPNI classification
01	Housing
02	Health
03	Recreation and culture
04	Education
05	Social protection
06	Religion
07	Political parties, labour and professional organizations
08	Environmental protection
09	Services

Annex 9.V - COFOG Level 2

GF01	General public services
GF0101	Executive and legislative organs, financial and fiscal affairs, external affairs
GF0102	Foreign economic aid
GF0103	General services
GF0104	Basic research
GF0105	R&D General public services
GF0106	General public services n.e.c.
GF0107	Public debt transactions
GF0108	Transfers of a general character between different levels of government
GF02	Defence
GF0201	Military defence
GF0202	Civil defence
GF0203	Foreign military aid
GF0204	R&D Defence
GF0205	Defence n.e.c.
GF03	Public order and safety
GF0301	Police services
GF0302	Fire-protection services
GF0303	Law courts
GF0304	Prisons
GF0305	R&D Public order and safety
GF0306	Public order and safety n.e.c.
GF04	Economic affairs
GF0401	General economic, commercial and labour affairs
GF0402	Agriculture, forestry, fishing and hunting
GF0403	Fuel and energy
GF0404	Mining, manufacturing and construction
GF0405	Transport
GF0406	Communication
GF0407	Other industries
GF0408	R&D Economic affairs
GF0409	Economic affairs n.e.c.
GF05	Environmental protection
GF0501	Waste management
GF0502	Waste water management
GF0503	Pollution abatement
GF0504	Protection of biodiversity and landscape
GF0505	R&D Environmental protection
GF0506	Environmental protection n.e.c.
GF06	Housing and community amenities
GF0601	Housing development
GF0602	Community development
GF0603	Water supply

GF0604 Street lighting
GF0605 R&D Housing and community amenities
GF0606 Housing and community amenities n.e.c.

GF07 Health

GF0701 Medical products, appliances and equipment
GF0702 Outpatient services
GF0703 Hospital services
GF0704 Public health services
GF0705 R&D Health
GF0706 Health n.e.c.

GF08 Recreation, culture and religion

GF0801 Recreational and sporting services
GF0802 Cultural services
GF0803 Broadcasting and publishing services
GF0804 Religious and other community services
GF0805 R&D Recreation, culture and religion
GF0806 Recreation, culture and religion n.e.c.

GF09 Education

GF0901 Pre-primary and primary education
GF0902 Secondary education
GF0903 Post-secondary non-tertiary education
GF0904 Tertiary education
GF0905 Education not definable by level
GF0906 Subsidiary services to education
GF0907 R&D Education
GF0908 Education n.e.c.

GF10 Social protection

GF1001 Sickness and disability
GF1002 Old age
GF1003 Survivors
GF1004 Family and children
GF1005 Unemployment
GF1006 Housing
GF1007 Social exclusion n.e.c.
GF1008 R&D Social protection
GF1009 Social protection n.e.c.

Annex 9.VI - Classification of Change in Inventories

	Category of stock
a)	Finished goods
b)	Semi-finished goods
c)	Raw materials and spare parts
d)	Fuels
e)	Goods for resale
	Total stocks

Annex 9.VII - Classification of Fixed assets

Type of asset
TOTAL CONSTRUCTION
Buildings and works
Dwellings
Non-residential buildings & Other construction works
TOTAL TRANSPORT
Motor Vehicles
Ships
Aircrafts
TOTAL MACHINERY & WEAPONS
ICT
of which Computers (hardware)
Machinery & equipment
Machinery
Furniture & other equipment
Weapon Systems
TOTAL CULTIVATED ASSETS
Tree Plantation
Breeding Stock
TOTAL INTANGIBLE FIXED ASSETS
R&D
Software
Mineral Exploration
Other Intellectual Property

Annex 9.VIII - Classification of Types of Construction

1 BUILDINGS

11 Residential buildings

111 One-dwelling buildings

1110 One-dwelling buildings

112 Two- and more dwelling buildings

1121 Two-dwelling buildings

1122 Three- and more dwelling buildings

113 Residences for communities

1130 Residences for communities

12 Non-residential buildings

121 Hotels and similar buildings

1211 Hotel buildings

1212 Other short-stay accommodation buildings

122 Office buildings

1220 Office buildings

123 Wholesale and retail trade buildings

1230 Wholesale and retail trade buildings

124 Traffic and communication buildings

1241 Communication buildings, stations, terminals and associated buildings

1242 Garage buildings

125 Industrial buildings and warehouses

1251 Industrial buildings

1252 Reservoirs, silos and warehouses

126 Public entertainment, education, hospital or institutional care buildings

1261 Public entertainment buildings

1262 Museums and libraries

1263 School, university and research buildings

1264 Hospital or institutional care buildings

1265 Sports halls

127 Other non-residential buildings

1271 Non-residential farm buildings

1272 Buildings used as places of worship and for religious activities

- 1273 Historic or protected monuments
- 1274 Other buildings not elsewhere classified

Annex 9.IX – Classification of Combined Nomenclature (CN8)

SECTION AND CHAPTER DEFINITIONS, H.S. BASED

Sections and Chapters	C.N. Code
I. Live animals; animal products	0101 21 00 - 0511 99 85
1. Live animals	0101 21 00 - 0106 90 00
2. Meat and edible meat offal	0201 10 00 - 0210 99 90
3. Fish and crustaceans, molluscs and other aquatic invertebrates	0301 11 00 - 0308 90 90
4. Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included	0401 10 10 - 0410 00 00
5. Products of animal origin, not elsewhere specified or included	0501 00 00 - 0511 99 85
II. Vegetable products	0601 10 10 - 1404 90 00
6. Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage	0601 10 10 - 0604 90 99
7. Edible vegetables and certain roots and tubers	0701 10 00 - 0714 90 90
8. Edible fruit and nuts; peel of citrus fruit or melons	0801 11 00 - 0814 00 00
9. Coffee, tea, mate and spices	0901 11 00 - 0910 99 99
10. Cereals	1001 11 00 - 1008 90 00
11. Products of the milling industry; malt; starches; inulin; wheat gluten	1101 00 11 - 1109 00 00
12. Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and fodder	1201 10 00 - 1214 90 90
13. Lac; gums, resins and other vegetable saps and extracts	1301 20 00 - 1302 39 00
14. Vegetable plaiting materials; vegetable products not elsewhere specified or included	1401 10 00 - 1404 90 00
III. Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes	1501 10 10 - 1522 00 99
15. Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes	1501 10 10 - 1522 00 99
IV. Prepared foodstuffs; beverages spirits and vinegar; tobacco and manufactured tobacco substitutes	1601 00 10 - 2403 99 90
16. Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates	1601 00 10 - 1605 69 00
17. Sugars and sugar confectionery	1701 12 10 - 1704 90 99
18. Cocoa and cocoa preparations	1801 00 00 - 1806 90 90
19. Preparations of cereals, flour, starch or milk; pastrycooks' products	1901 10 00 - 1905 90 90
20. Preparations of vegetables, fruit, nuts or other parts of plants	2001 10 00 - 2009 90 98
21. Miscellaneous edible preparations	2101 11 00 - 2106 90 98
22. Beverages, spirits and vinegar	2201 10 11 - 2209 00 99

23.	Residues and waste from the food industries; prepared animal fodder	2301 10 00 - 2309 90 96
24.	Tobacco and manufactured tobacco substitutes	2401 10 35 - 2403 99 90
V.	Mineral products	2501 00 10 - 2716 00 00
25.	Salt; sulphur; earths and stone; plastering materials; lime and cement	2501 00 10 - 2530 90 00
26.	Ores, slag and ash	2601 11 00 - 2621 90 00
27.	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes	2701 11 00 - 2716 00 00
VI.	Products of the chemical or allied industries	2801 10 00 - 3826 00 90
28.	Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes	2801 10 00 - 2853 90 90
29.	Organic chemicals	2901 10 00 - 2942 00 00
30.	Pharmaceutical products	3001 20 10 - 3006 92 00
31.	Fertilisers	3101 00 00 - 3105 90 80
32.	Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and other mastics; inks	3201 10 00 - 3215 90 70
33.	Essential oils and resinoids; perfumery, cosmetic or toilet preparations	3301 12 10 - 3307 90 00
34.	Soap, organic surface- active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations, candles and similar articles, modelling pastes, "dental waxes" and dental preparations with a basis of plaster	3401 11 00 - 3407 00 00
35.	Albuminoidal substances; modified starches; glues; Enzymes	3501 10 10 - 3507 90 90
36.	Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations	3601 00 00 - 3606 90 90
37.	Photographic or cinematographic goods	3701 10 00 - 3707 90 90
38.	Miscellaneous chemical products	3801 10 00 - 3826 00 90
VII.	Plastics and articles thereof; rubber and articles thereof	3901 10 10 - 4017 00 00
39.	Plastics and articles thereof	3901 10 10 - 3926 90 97
40.	Rubber and articles thereof	4001 10 00 - 4017 00 00
VIII.	Raw hides and skins, leather, furskins and articles thereof; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk worm gut)	4101 20 10 - 4304 00 00
41.	Raw hides and skins (other than furskins) and leather	4101 20 10 - 4115 20 00
42.	Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk worm gut)	4201 00 00 - 4206 00 00

43.	Furskins and artificial fur; manufactures thereof	4301 10 00 - 4304 00 00
IX.	Wood and articles of wood; wood charcoal; cork and articles of cork; manufactures of straw, of esparto or other plaiting materials; basketware and wickerwork	4401 11 00 - 4602 90 00
44.	Wood and articles of wood; wood charcoal	4401 11 00 - 4421 99 99
45.	Cork and articles of cork	4501 10 00 - 4504 90 80
46.	Manufactures of straw, of esparto or of other plaiting materials; basketware and wickerwork	4601 21 10 - 4602 90 00
X.	Pulp of wood or of other fibrous cellulosic material; recovered (waste and scrap) paper or paperboard; paper and paperboard and articles thereof	4701 00 10 - 4911 99 00
47.	Pulp of wood or of other fibrous cellulosic material; recovered (waste and scrap) paper or paperboard	4701 00 10 - 4707 90 90
48.	Paper and paperboard; articles of paper pulp, of paper or of paperboard	4801 00 00 - 4823 90 85
49.	Printed books, newspapers, pictures and other products of the printing industry; manuscripts, typescripts and plans	4901 10 00 - 4911 99 00
XI.	Textiles and textile articles	5001 00 00 - 6310 90 00
50.	Silk	5001 00 00 - 5007 90 90
51.	Wool, fine or coarse animal hair, horsehair yarn and woven fabric	5101 11 00 - 5113 00 00
52.	Cotton	5201 00 10 - 5212 25 90
53.	Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn	5301 10 00 - 5311 00 90
54.	Man-made filaments; strip and the like of man-made textile materials	5401 10 12 - 5408 34 00
55.	Man-made staple fibres	5501 10 00 - 5516 94 00
56.	Wadding, felt and nonwovens; special yarns; twine, cordage, ropes and cables and articles thereof	5601 21 10 - 5609 00 00
57.	Carpets and other textile floor coverings	5701 10 10 - 5705 00 80
58.	Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; Embroidery	5801 10 00 - 5811 00 00
59.	Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use	5901 10 00 - 5911 90 99
60.	Knitted or crocheted fabrics	6001 10 00 - 6006 90 00
61.	Articles of apparel and clothing accessories, knitted or crocheted	6101 20 10 - 6117 90 00
62.	Articles of apparel and clothing accessories, not knitted or crocheted	6201 11 00 - 6217 90 00
63.	Other made-up textile articles; sets; worn clothing and worn textile articles; rags	6301 10 00 - 6310 90 00

XII.	Footwear, headgear, umbrellas, sun umbrellas walking sticks, seat-sticks, whips, riding-crops and parts thereof; prepared feathers and articles made therewith; artificial flowers; articles of human hair	6401 10 00 - 6704 90 00
64.	Footwear, gaiters and the like, parts of such articles	6401 10 00 - 6406 90 90
65.	Headgear and parts thereof	6501 00 00 - 6507 00 00
66.	Umbrellas, sun umbrellas, walking sticks, seat-sticks, whips, riding-crops and parts thereof	6601 10 00 - 6603 90 90
67.	Prepared feathers and down and articles made of feathers or of down; artificial flowers; Articles of human hair	6701 00 00 - 6704 90 00
XIII.	Articles of stone, plaster, cement, asbestos, mica or similar materials; ceramic products; glass and glassware	6801 00 00 - 7020 00 80
68.	Articles of stone, plaster, cement, asbestos, mica or similar materials	6801 00 00 - 6815 99 00
69.	Ceramic products	6901 00 00 - 6914 90 00
70.	Glass and glassware	7001 00 10 - 7020 00 80
XIV.	Natural or cultured pearls, precious or semi- precious stones, precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin	7101 10 00 - 7118 90 00
71.	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal, and articles thereof; imitation jewellery, coin	7101 10 00 - 7118 90 00
XV.	Base metals and articles of base metal	7201 10 11 - 8311 90 00
72.	Iron and steel	7201 10 11 - 7229 90 90
73.	Articles of iron or steel	7301 10 00 - 7326 90 98
74.	Copper and articles thereof	7401 00 00 - 7419 99 90
75.	Nickel and articles thereof	7501 10 00 - 7508 90 00
76.	Aluminium and articles thereof	7601 10 00 - 7616 99 90
77.	(Reserved for possible future use in the Harmonized System)	
78.	Lead and articles thereof	7801 10 00 - 7806 00 80
79.	Zinc and articles thereof	7901 11 00 - 7907 00 00
80.	Tin and articles thereof	8001 10 00 - 8007 00 80
81.	Other base metals; cermets; articles thereof	8101 10 00 - 8113 00 90
82.	Tools, implements, cutlery, spoons and forks, of base metal; parts thereof of base metal	8201 10 00 - 8215 99 90
83.	Miscellaneous articles of base metal	8301 10 00 - 8311 90 00
XVI.	Machinery and mechanical appliances; electrical equipment; parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	8401 10 00 - 8548 90 90

84.	Nuclear reactors, boilers machinery and mechanical appliances; parts thereof	8401 10 00 - 8487 90 90
85.	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers and parts and accessories of such articles	8501 10 10 - 8548 90 90
XVII.	Vehicles, aircraft, vessels and associated transport equipment	8601 10 00 - 8908 00 00
86.	Railway or tramway locomotives, rolling-stock and parts thereof; railway or tramway track fixtures and fittings and parts thereof; mechanical (including electromechanical) traffic signalling equipment of all kinds	8601 10 00 - 8609 00 90
87.	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	8701 10 00 - 8716 90 90
88.	Aircraft, spacecraft, and parts thereof	8801 00 10 - 8805 29 00
89.	Ships, boats and floating structures	8901 10 10 - 8908 00 00
XVIII.	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; clocks and watches; musical instruments; parts and accessories thereof	9001 10 10 - 9209 99 70
90.	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof	9001 10 10 - 9033 00 90
91.	Clocks and watches and parts thereof	9101 11 00 - 9114 90 00
92.	Musical instruments; parts and accessories of such articles	9201 10 10 - 9209 99 70
XIX.	Arms and ammunition; parts and accessories thereof	9301 10 00 - 9307 00 00
93.	Arms and ammunition; parts and accessories thereof	9301 10 00 - 9307 00 00
XX.	Miscellaneous manufactured articles	9401 10 00 - 9620 00 99
94.	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified or included; illuminated signs, illuminated name-plates and the like; prefabricated buildings	9401 10 00 - 9406 90 90
95.	Toys, games and sports requisites; parts and accessories thereof	9503 00 10 - 9508 90 00
96.	Miscellaneous manufactured articles	9601 10 00 - 9620 00 99
XXI.	Works of art, collectors' pieces and antiques	9701 10 00 - 9706 00 00
97.	Works of art, collectors' pieces and antiques	9701 10 00 - 9706 00 00

Annex 9.X - Classification of Import by economic destination

Code	Import by economic destination
	Consumer Goods
ECDES 1A1	Food and beverages (Consumer goods)
ECDES 1A2	Other consumer goods (including tobacco)
ECDES 1B1	Semi-durable consumer goods
ECDES 1C1	Durable consumer goods
	Intermediate Inputs
ECDES 2A1	Agriculture products, used as intermediate inputs
ECDES 2B1	Construction & Mining products used as intermediate inputs
ECDES 2C1	Manufacturing products used as intermediate inputs
ECDES 2D1	Transport, Storage and Communication products used as interm. inputs
ECDES 2E1	Other
	Capital Goods
ECDES 3A1	Agriculture capital goods
ECDES 3B1	Construction & Mining capital goods
ECDES 3C1	Manufacturing capital goods
ECDES 3D1	Transport, Storage & Communication capital goods
ECDES 3E1	Other capital goods
	Transport Equipment
ECDES 4A1	Passenger motor vehicles
ECDES 4B1	Motor vehicles for transport of goods
ECDES 4C1	Ships, boats and floating structures
ECDES 4D1	Public-service type passenger motor vehicles
ECDES 4E1	Aircraft, helicopters, balloons and airships
ECDES 4F1	Motorcycles and bicycles
ECDES 4G1	Other transport equipment
ECDES 4H1	Parts for transport equipment
	Fuels and Lubricants
ECDES 5A1	Fuels & lubricants
	Unclassified
ECDES 6A1	Unclassified

Annex 9.XI - Classification used for Balance of Payments purposes

(Imports and Exports)

BoP Items
1. Current account
<u>Goods</u>
General merchandise on a balance of payments (BOP) basis
Net exports of goods under merchanting
Goods acquired under merchanting (negative credit)
Goods sold under merchanting
Non-monetary gold
<u>Services</u>
Manufacturing services on physical inputs owned by others
Maintenance and repair services not included elsewhere (n.i.e.)
Transport
Sea transport
Air transport
Other modes of transport
Postal and courier services
Travel
Business
Personal
Health-related
Education-related
Other
Construction
Construction abroad
Construction in the reporting economy
Insurance and pension services
Direct insurance
Reinsurance
Auxiliary insurance services
Pension and standardized guaranteed services
Financial services
Explicitly charged and other financial services
Financial intermediation services indirectly measured (FISIM)
Charges for the use of intellectual property n.i.e.
Telecommunications, computer, and information services
Telecommunications services
Computer services

Information services
Other business services
Research and development services
Professional and management consulting services
Technical, trade-related, and other business services
Personal, cultural and recreational services
Audiovisual and related services
Other personal, cultural, and recreational services
Government goods and services n.i.e.
Services not allocated
<u>Primary income</u>
Compensation of employees
Investment income
Direct investment
Equity
Dividends and withdrawals from income of quasi-corporations
Reinvested earnings
Debt instruments
Portfolio investment
Equity and investment fund shares
Debt securities - interest
Short-term debt securities
Long-term debt securities
Other investment
Withdrawals from income of quasi-corporations
Interest
Investment income attributable to policyholders in insurance, pension schemes, and standardised guarantee schemes
Reserve assets
Other primary income
General government
Other sectors
<u>Secondary income</u>
General government
Other sectors
Of which: workers' remittances
2. Capital account
Gross acquisitions/disposals of non-produced non-financial assets
Capital transfers
3. Financial account

<u>Direct investment</u>
Equity and Investment Funds shares/units
Equity
Listed
Unlisted
Other (e.g. real estate)
Investment Funds shares/units
Equity other than reinvestment of earnings
In direct investment enterprises
In direct investor (reverse investment)
Between fellow enterprises
Reinvestment of earnings
Debt instruments
In direct investment enterprises
In direct investor (reverse investment)
Between fellow enterprises
<u>Portfolio investment</u>
Equity and investment fund shares
Equity securities
Central bank
Other MFIs
General government
Other sectors
Investment fund shares
Central bank
Other MFIs
General government
Other sectors
Debt securities
Short-term
Central bank
Other MFIs
General government
Other sectors
Long-term
Central bank
Other MFIs
General government
Other sectors
<u>Financial derivatives (other than reserves) and employee stock options</u>
Central bank
Other MFIs
General government
Other sectors

<u>Other investment</u>
Other equity
Currency and deposits
Central bank
Other MFIs
General government
Other sectors
Loans
Central bank
Other MFIs
General government
Other sectors
Insurance, pension schemes, and standardised guarantee schemes
Central bank
Other MFIs
General government
Other sectors
Trade credits and advances
Central bank
Other MFIs
General government
Other sectors
Other accounts receivable/payable
Central bank
Other MFIs
General government
Other sectors
SDRs
<u>Reserve assets</u>
Monetary gold
Special drawing rights
Reserve position in the IMF
Other reserve assets
Currency and deposits
Claims on monetary authorities
Claims on other entities
Securities
Debt securities
Short-term
Long-term
Equity and investment fund shares
Financial derivatives
Other claims

4. Balancing items
Balance on goods and services
Current account balance
Net lending (+) / net borrowing (-) (balance from current and capital account)
Net lending (+) / net borrowing (-) (from financial account)
Net errors and omissions

CHAPTER 10: MAIN DATA SOURCES USED

10.0 Statistical surveys and other data sources used for the production approach

10.0.1 Agricultural production

10.0.1.1 Cereals

Name of survey: Survey on Cereals
Link to surveys undertaken at the European level: Module 64100 (crop production statistics).
Reporting units: Agricultural holdings.
Periodicity: Annual
Time of availability of results: 4 months after the end of the survey.
Sampling frame: The Register of Agricultural Holdings, which was formed after the completion of the Census of Agriculture 2010 and is updated based on information collected from the annual sample surveys as well as from administrative sources.
Survey is compulsory or voluntary? The legal basis for the production of statistics on annual crops is the Regulation (EC) No 543/2009 and the Annex of the <u>Commission Delegated Regulation (EU) No 2015/1557</u> . The survey is mandatory according to the provisions of the Statistics Law, No. 15(I)/2000.
Main features of survey methodology: The Survey on Cereals was conducted with telephone interviews to the holders. A paper questionnaire was filled in. The survey was conducted as sample survey with the method of stratified systematic random sampling. The stratification variable was the area of cereals cultivated.
Population size: 6764 holdings
Sample size: 5519 holdings with a coverage of 98% of the total cultivated area with cereals
Survey response rate: 97.4%
Method used to impute for missing data: The weights were recalculated taking into account the non-response rate.
Variable used for grossing-up to the population: Number of holdings
Sample coverage, as % in terms of variable used for grossing-up: 82%
Main variables collected: Area under cultivation, harvested area, irrigated area, humidity rate, quantity and price of seeds used for the cultivation, opening and closing stock, harvested production, producer prices and its final use.
Further adjustments made to the survey data: None.

10.0.1.2 Vineyards

Name of survey: Survey on Vineyards
Link to surveys undertaken at the European level: Module 64100 (crop production statistics).
Reporting units: Agricultural holdings.
Periodicity: Annual
Time of availability of results: 4 months after the end of the survey.
Sampling frame: The Register of Agricultural Holdings, which was formed after the completion of the Census of Agriculture 2010 and is updated based on information collected from the annual sample surveys as well as from administrative sources.
Survey is compulsory or voluntary? The legal basis for the production of statistics on annual crops is the Regulation (EC) No 543/2009 and the Annex of the Commission Delegated Regulation (EU) No 2015/1557. The survey is mandatory according to the provisions of the Statistics Law, No. 15(I)/2000.
Main features of survey methodology: The survey on Vineyards was conducted with telephone interviews to the holders using an electronic questionnaire in Blaise. The survey was conducted as sample survey with the method of stratified systematic random sampling. The stratification variable was the area of vines cultivated.
Population size: 9986 holdings
Sample size: 5965 holdings with a coverage of 92% of total utilised agricultural area with vines.
Survey response rate: 96%
Method used to impute for missing data: The weights were recalculated taking into account the non-response rate.
Variable used for grossing-up to the population: Number of holdings
Sample coverage, as % in terms of variable used for grossing-up: 60%.
Main variables collected: Production area, irrigated area, producer prices, harvested production and its final use.
Further adjustments made to the survey data: None.

10.0.1.3 Crops

Name of survey: Survey on Crops
Link to surveys undertaken at the European level: Module 64100 (crop production statistics).
Reporting units: Agricultural holdings.
Periodicity: Annual
Time of availability of results: 4 months after the end of the survey.
Sampling frame: The Register of Agricultural Holdings, which was formed after the completion of the Census of Agriculture 2010 and is updated based on information collected from the annual sample surveys as well as from administrative sources.
Survey is compulsory or voluntary? The legal basis for the production of statistics on annual crops is the Regulation (EC) No 543/2009 and the Annex of the Commission Delegated Regulation (EU) No 2015/1557. The survey is mandatory according to the provisions of the Statistics Law, No. 15(I)/2000.
Main features of survey methodology: The Survey on Crops was conducted with telephone interviews to the holders. A paper questionnaire was filled in. The survey was conducted as sample survey with the method of stratified systematic random sampling. The stratification variable was the cultivated area of each group of crops (vegetables, melons and strawberries, citrus etc.).
Population size: 30738 holdings
Sample size: 12153 holdings
Survey response rate: 92%
Method used to impute for missing data: The weights were recalculated taking into account the non-response rate.
Variable used for grossing-up to the population: Number of holdings
Sample coverage, as % in terms of variable used for grossing-up: 40%
Main variables collected: Harvested area for vegetables, melons and strawberries, production area for permanent crops, number of trees, harvested production and producer prices.
Further adjustments made to the survey data: None.

10.0.2 Agricultural structure

10.0.2.1 Farm structure survey (Census of Agriculture 2010)

Name of survey: Farm Structure Survey (Census of Agriculture 2010).
Link to surveys undertaken at the European level: Farm structure and typology.
Reporting units: Agricultural holdings, which were defined to be those with a total agricultural area of at least one decare or half a decare under glass or at least one cow or two other large animals or five small animals or fifty chicken and poultry or twenty beehives or 5 ostriches or 10 rabbit breeding females.
Periodicity: FSS every 3 years as a sample survey and Census every 10 years (Census 2010, FSS 2013: Sample, FSS 2016: sample).
Time of availability of results: 12-15 months after the end of the census/survey.
Sampling frame: The Register of Agricultural Holdings, which was formed after the completion of the Census of Agriculture 2010 and is updated based on information collected from the annual sample surveys as well as from administrative sources.
Survey is compulsory or voluntary? Survey is compulsory.
Main features of survey methodology: Personal interviews using paper questionnaires.
Population size: Approximately 38.880.
Sample size: Census (100%)
Survey response rate: Almost 100%.
Method used to impute for missing data: None.
Main variables collected: UAA – Legal status, type of tenure, irrigation, Agricultural Area, type of Agricultural Activity (Olive trees, Citrus, Other Fruit, Bovines, Pigs), characteristics of the holding, equipment, persons employed, biological culture, other gainful activities, rural development measures, the farm has benefitted from.
Further adjustments made to the survey data: None.

10.0.2.2 Fruit and olive plantations 2017

Name of survey: Survey on Fruit and Olive plantations 2017
Link to surveys undertaken at the European level:
Reporting units: Agricultural holdings.
Periodicity: Survey on Fruit and Olive plantations is carried out every 5 years.
Time of availability of results: 9 months after the end of the survey.
Sampling frame: The Register of Agricultural Holdings, which was formed after the completion of the Census of Agriculture 2010 and is updated based on information collected from the annual sample surveys as well as from administrative sources.
Survey is compulsory or voluntary? The Survey is compulsory and was carried out in Cyprus based on the Regulation No 1337/2011 of the European Parliament and of the Council.
Main features of survey methodology: Telephone interviews using paper questionnaires.
Population size: 30257 holdings
Sample size: 26586 holdings
Survey response rate: 98,5%
Method used to impute for missing data: The weights were recalculated taking into account the non-response rate.
Main variables collected: The structural orchard statistics provide information on the area, age and density of apples, pears, peaches, nectarines, apricots, citrus fruit and olive plantations.
Further adjustments made to the survey data: None.

10.0.3 Forestry

Name of data source: Department of Forests
Organization collecting the data, and purposes for which it is collected: For the compilation of Economic Accounts of Agriculture, information related to the input and output of Forestry is provided by the Department of Forests.
Reporting units: Public and private forests and forest enterprises.
Periodicity: Annual.
Variables collected: Timber, Fuel wood, Charcoal, Seeds, Plants, Christmas trees, Reforestation, Silviculture. Information on quantities and prices of forest products is provided directly by the Department of Forests.
Methods used to allow for missing data: None.
Further adjustments made to the data: None.

10.0.4 Fishing administrative data

Name of data source: Department of Fisheries and Marine Research
Organization collecting the data, and purposes for which it is collected: For the compilation of Economic Accounts of Agriculture, information related to the input and output of Fishery is provided by the Department of Fisheries and Marine Research.
Reporting units: Fishermen and Enterprises active in the fishing sector.
Periodicity: Annual.
Variables collected: Input (purchaser prices), Output (producer prices), and Capital expenditure (purchaser prices) and production.
Methods used to allow for missing data: None.
Further adjustments made to the data: None.

10.0.5 Mining and quarrying, manufacturing, electricity, water supply and materials recovery

Name of survey: Industrial Production Survey (includes: Mining and Quarrying, Manufacturing, Electricity, Water Supply and Materials Recovery).
Link to surveys undertaken at the European level: Structural Business Statistics.
Reporting units: Enterprise.
Periodicity: Annual.
Time of availability of results: 18 months after the end of the reference year.
Sampling frame: Business Register.
Survey is compulsory or voluntary? Compulsory.
Main features of survey methodology: Personal interview. The survey is based on a PPS stratified sample by employment size and NACE), covering all enterprises engaging 20 persons and over and a sample of the enterprises, employing less than 20 persons. Enumerators of the Statistical Service collect the data with the use of a special questionnaire.
Population size: 5.340 enterprises.
Sample size: 1.490 enterprises.
Survey response rate: 99%.
Method used to impute for missing data: Adjustment of the sampling coefficient or estimating missing data.
Variable used for grossing-up to the population: Employment.
Sample coverage, as % in terms of variable used for grossing-up: 79%.
Main variables collected: All variables asked for the SBS, e.g., Turnover, Production Value, Employment, Expenditure on fixed assets, Purchases of Goods and Services, Direct and Administrative costs, Wages and Salaries, Labour Costs, Stocks, Rentals paid, Depreciation etc.
Further adjustments made to the survey data: None.

10.0.6 Construction production

Name of survey: Construction Survey.
Link to surveys undertaken at the European level: Structural Business Statistics.
Reporting units: Enterprise.
Periodicity: Annual.
Time of availability of results: 18 months after the end of the reference year.
Sampling frame: Updated business register.
Survey is compulsory or voluntary? Survey is compulsory according to the National Statistical Law.
Main features of survey methodology: Personal interviews using paper questionnaires. PPS sampling according to stratified employment, size and NACE.
Population size: 7,847 enterprises.
Sample size: 1,290 enterprises (stratified sampling).
Survey response rate: Almost 100%.
Method used to impute for missing data: For enterprise non response, if data is available for the same enterprise from the previous year or from other sources (such as STS) then the variables are estimated. If data for the enterprise is not available, it is removed from the sample and cell weights are recalculated. For item non response, variables are estimated based on past data or variable correction and on expert judgement.
Variable used for grossing-up to the population: Number of persons employed.
Sample coverage, as % in terms of variable used for grossing-up: 56,6%.
Main variables collected: All variables asked for the SBS, e.g. Turnover, Gross Output, Employment, Expenditure on fixed assets, Purchases of Goods and Services, Direct and Administrative costs, Wages and Salaries, Labour Costs, Stocks, Rentals paid, Depreciation etc.
Further adjustments made to the survey data: None.

10.0.7 Trade

Wholesale Trade, Retail Trade).
Link to surveys undertaken at the European level: Structural Business Statistics.
Reporting units: Enterprise.
Periodicity: Annual.
Time of availability of results: 18 months after the end of the reference year.
Sampling frame: Business Register.
Survey is compulsory or voluntary? Survey is compulsory.
Main features of survey methodology: The sample is selected on PPS basis. It is stratified by employment size group and by NACE. The survey is carried out by personal interview on a paper questionnaire.
Population size: 16,635 enterprises.
Sample size: 2,221 enterprises (for 2017).
Survey response rate: 97,2% of the sample.
Method used to impute for missing data: Recalculation of the sampling coefficient.
Variable used for grossing-up to the population: Number of persons employed.
Sample coverage, as % in terms of variable used for grossing-up: 60%.
Main variables collected: Turnover, Purchases, Sales, Stock of traded goods, Employment, Investments, Other Direct and Administrative Inputs, Personnel costs, etc.
Further adjustments made to the survey data: None.

10.0.8 Services and transport survey

Name of survey: Services and Transport Survey (NACES:49,50,51,52,53,55,56,58,68,69,70,71,73,74,75,77,78,79,80,81,82,85,86,87,88,90,91,92,93,94,95,96,97)
Link to surveys undertaken at the European level: Structural Business Statistics.
Reporting units: Enterprise.
Periodicity: Annual.
Time of availability of results: 19 months after the end of the reference year.
Sampling frame: Business Register
Survey is compulsory or voluntary? Compulsory.
Main features of survey methodology: The Survey for all subsectors, except for sector T (97), is carried out on a sample basis (PPS stratified on employment size and NACE), covering all enterprises engaging 20 persons and over and a sample of the enterprises, employing less than 20 persons. Enumerators of the Statistical Service collected the requested data with the use of a special questionnaire. For Sector T administrative sources were used for the variable calculation.
Population size: The population size for all sectors is 37,250 enterprises, except for sector T which is 23.653 enterprises.
Sample size: The number of enterprises included in the sample is 3.673 (T is not included).
Survey response rate: 90%.
Method used to impute for missing data: Adjustment of the sampling coefficient or estimating missing data.
Variable used for grossing-up to the population: Employment.
Sample coverage, as % in terms of variable used for grossing-up: 58%.
Main variables collected: All variables asked for the SBS, e.g., Turnover, Gross Output, Employment, Expenditure on fixed assets, Purchases of Goods and Services, Direct and Administrative costs, Wages and Salaries, Labour Costs, Stocks, Rentals paid, Depreciation etc.
Further adjustments made to the survey data: None.

10.0.9 Financial services

Name of survey: Financial Services Survey.
Link to surveys undertaken at the European level: None.
Reporting units: Cyprus Stock Exchange (NACE 66.11.1), Cyprus Securities & Exchange Commission (NACE 66.11.2), Cypriot Investment Firms (NACE 66.12), Fund Managers (NACE 66.3) and Payment Institutions (NACE 66.19.9).
Periodicity: Annual.
Time of availability of results: 18 months after the reference period.
Sampling frame: Enterprises regulated by CySEC and Central Bank of Cyprus.
Survey is compulsory or voluntary? Compulsory (Statistics Law 2000).
Main features of survey methodology: All units covered. Covering letter for the submission of the annual audited financial statements of the company plus telephone call for reminder and quick response.
Population size: 2 public corporations and 273 enterprises.
Sample size: All units covered.
Survey response rate: 100%.
Method used to impute for missing data: No missing data.
Variable used for grossing-up to the population: None.
Sample coverage, as % in terms of variable used for grossing-up: None.
Main variables collected: Revenue from provision of financial services, Other Income, Employment, Wages and Salaries, Capital Formation, Direct Expenses, Administrative and Other Related Expenses, Rentals, Indirect Taxes, Donations Subsidies and Contributions.
Further adjustments made to the survey data: None.

10.0.10 Financial services, banks

Name of data source: Quarterly Profit and Loss Survey Data (QPLSD) report, that includes the necessary data and variables for all commercial banks.
Organization collecting the data, and purposes for which it is collected: Joint survey of CYSTAT and Central Bank of Cyprus (CBC). The latter collects the data, since it has developed the necessary infrastructure and is responsible for the supervision of the commercial banks.
Reporting units: All Monetary Financial Institutions (MFIs) that are registered in Cyprus.
Periodicity: Quarterly.
Variables collected: Interest Receivable on Loans and Payable on Deposits, Commissions and fees receivable and payable, other revenues, Direct and Administrative Expenses, Rentals Payable and Receivable, Gross Fixed Capital Formation.
Methods used to allow for missing data: No missing data.
Further adjustments made to the data: Quality checks are performed to the microdata as received by the CBC and possible changes are made in case where there are corrections or updated information from the MFIs.

10.0.11 Financial services, insurances

Name of data source: Administrative data: Structured reporting forms and completed analytical statements for supervisory purposes. Data is processed and presented in an aggregated form
Organization collecting the data, and purposes for which it is collected: Insurance Company's Control Service collects data for Structural Business Statistics (SBS).
Reporting units: Insurance Companies (Life and Non-life) and reinsurance.
Periodicity: Annual.
Variables collected: Variables used for balance sheets, non-technical and technical accounts and notes in the financial statements.
Methods used to allow for missing data: No missing data.
Further adjustments made to the data: None.

10.0.12 NPISH

Name of data source: Structural statistics for all the branches of economic activities, accounting statistics for government organizations and enterprises.
Organization collecting the data, and purposes for which it is collected: Statistical Service.
Reporting units: The reporting units are the institutional units, as they are defined in the European System, of Accounts 2010 framework.
Periodicity: Annual Surveys.
Variables collected: In the structural statistics of the economic variables: Gross Output, Gross Value Added, Compensation of Employees, Gross Capital Formation, and Employment.
Methods used to allow for missing data: Extrapolation from benchmarking.
Further adjustments made to the data: None

10.1 Statistical surveys and other data sources used for the income approach

10.1.1 Labour force survey

Name of survey: Labour Force Survey.
Link to surveys undertaken at the European level: Council regulation (EC) No 577/98 on the organization of a labour force sample survey.
Reporting units: Households.
Periodicity: From 2004 2 nd Quarter, the survey is conducted quarterly.
Time of availability of results: 12 weeks after the end of each quarter.
Sampling frame: Population census 2011 – List of households from the census of population register, updated to include newly constructed households.
Survey is compulsory or voluntary? Survey is compulsory.
Main features of survey methodology: The sample is proportionally distributed according to the number of households in 9 strata. The variables used for stratification are the region at district level and the classification in urban-rural areas. A rotation scheme comprising 6 waves is used. Each dwelling is kept in the sample for 6 quarters, and a sixth of the sample is renewed and 5/6 remains the same every survey period. For wave 1, face-to-face interviews are conducted using CAPI and for waves 2-6 telephone interviews are conducted using CATI.
Population size: 317,800 households.
Sample size: 4,600 dwellings, containing approximately 3,800 households. 10,200 persons are interviewed each quarter.
Survey response rate: 96.2% of the sample.
Method used to impute for missing data: No imputation is done because no missing variables are allowed.
Variable used for grossing-up to the population: Calibration method is used. Calibration variables are gender and age groups while stratification variables are regions (districts) and type of place of residence (urban/rural).
Sample coverage, as % in terms of variable used for grossing-up: 1.6% sampling rate.
Main variables collected: Demographic data (age, sex, nationality, education etc.), employment (economic activity, occupation, hours worked, status in employment etc.), unemployment (duration, economic activity and occupation of last job etc).
Further adjustments made to the survey data: None.

10.1.2 Labour cost

Name of survey: Labour Cost Survey 2016.
Link to surveys undertaken at the European level: The EU Labour Cost Survey.
Reporting units: The enterprise was the reporting and statistical unit.
Periodicity: The Survey takes place every four years. The Labour Cost Survey took place in year 2017. The reference period was year 2016.
Time of availability of results: 18 months after the end of the reference year.
Sampling frame: The Business Register.
Survey is compulsory or voluntary? The Survey is compulsory.
Main features of survey methodology: The size class 1000+ and the central government were fully covered. The sampling frame was the Business Register. The sample selection procedure for the private sector, including semi-governmental organizations and municipalities, took place separately from the Central Government. Concerning the private sector (including semi-governmental organizations and municipalities) the enterprises were first stratified by NACE.Rev.2 two digits divisions and within each NACE division, by employment size class i.e. 10-49, 50-249, 250-499, 500-999 and 1000+. The sample sizes in strata were specified using proportionate stratification, i.e., the sample size of each stratum is proportionate to the population size of the stratum. The sample in each of the strata was selected using simple random sampling.
Population size: The target population are all enterprises in NACE sections B to S with 10 or more employees in 2016. The enterprises in the private sector, the wider public sector and municipalities have been sampled using the 2015 Business Register. The total number of units is 3891. For the central government the total number of units is 88.
Sample size: The initial sample for the private sector, the wider public sector and municipalities was 1084. The central government was fully covered. Each Ministry/Department/Service of the central government is considered a local unit. For the central government the initial units were 88.
Survey response rate: Adjusted Response Rate: 91,8% (The non-response rate expressed as Non-response/(Sample size-Over-coverage), to take into account only in-scope units, is 8.2%.)
Unadjusted Response Rate: 85,1% (Number of responses/Sample size)
Method used to impute for missing data: No imputation methods were used.
Variable used for grossing-up to the population: Number of enterprises.
Sample coverage, as % in terms of variable used for grossing-up: Percentage of enterprises covered: 29% of the universe.
Main variables collected: Employment, Actual Hours Worked, Hours Paid, Labour Costs including Wages and Salaries, Social Contributions, Vocational training costs, other expenditure paid by the Employer for the employees, Taxes and subsidies Received by the Employer for the issues influencing the employees.
Further adjustments made to the survey data: None.

10.2 Statistical surveys and other data sources used for the expenditure approach

10.2.1 Household budget survey

Name of survey: Household Budget Survey 2015/2016.
Link to surveys undertaken at the European level: Household Budget Survey.
Reporting units: Household.
Periodicity: Every 5 years.
Time of availability of results: 9 months after the end of the reference year.
Sampling frame: Population Census 2011 and households built after 2011 as provided from a catalogue by the Electricity Authority of Cyprus.
Survey is compulsory or voluntary? Survey is compulsory.
Main features of survey methodology: Combination of Stratification and PPS sampling. Computer Assisted Personal Interviews.
Population size: End of 2015 – 313.000 households.
Sample size: 4.500 Households.
Survey response rate: 74,4% of the sample.
Method used to impute for missing data: Imputation was applied for missing diaries and for diaries which were partially completed. A diary is a document, which is completed by the household for 14 successive days. The household has to fill in all its expenditure in detail. Households with the same household size, same location, same social economic situation and same number of economically active persons were grouped together and based on their average expenditure on the various products, imputation was applied.
Variable used for grossing-up to the population: Number of households.
Sample coverage, as % in terms of variable used for grossing-up: 0,9%.
Main variables collected: Demographic variables such as sex, age, education, etc. Variables on employment and economic activity for each person aged 15+, as well as their income. Consumption and non-consumption expenditure using the UN COICOP classification.
Further adjustments made to the survey data: The final sample is weighted on the basis of the geographic distribution of households from which the original sample was derived.

10.2.2 Foreign trade

<p>Name of data source: The Intra – EU trade statistics are compiled mainly via the “Intrastat system” in which the providers of statistical information make detailed monthly returns giving information on arrivals or dispatches with EU countries and the VAT Returns on which all VAT registered enterprises are required to record the total value of goods imported or exported from or to other EU Member States. The statistics of trade with non-EU countries are compiled mainly from the Customs Authority computerized system for imports (“Theseas” system) and the Customs computerized system for exports. Other administrative data sources are also utilized such as Customs data for Intra – EU trade, civil aviation and merchant shipping registers.</p>
<p>Organization collecting the data, and purposes for which it is collected: The TAX Department is responsible for collection of Intra –EU trade data via the Intrastat system and maintenance of the Intrastat register. From 1st of July 2012, Intrastat returns are submitted by traders only in electronic format (web declarations). The Statistical Service is responsible for quality controls (e.g., validity and credibility checks), estimations for all traders who have not been included (Intrastat non-responders and traders below the Intrastat exception thresholds), compilation and dissemination of Intra – EU trade statistics. For extra-EU trade, the majority of data are collected by the Customs Authorities through “Theseas” computerized system for imports and the customs exports computerized system. The Statistical Service performs quality checks, compilation and dissemination of Extra-EU trade statistics.</p>
<p>Reporting units: For Intra – EU trade statistics, the reporting units are all the taxable persons who contact Intra EU arrivals or dispatches of goods. For Extra – EU trade statistics, the reporting units are all the traders with transactions above the Extra – EU trade threshold.</p>
<p>Periodicity: Monthly.</p>
<p>Variables collected: For Intra – EU trade the variables collected are: flow, commodity code, country of origin, country of consignment / destination, mode of transport, nature of transaction, invoice value, delivery terms, statistical procedure, statistical value, supplementary unit, net mass. For Extra – EU trade the variables collected are: flow, commodity code, country of origin / destination / consignment, net mass, supplementary units, statistical value, custom procedure, mode of transport etc.</p>
<p>Methods used to allow for missing data: The Statistical Service prepares the estimates for all traders who have not been included (intrastat non responders and traders below the intrastat threshold) and for certain special categories of trade.</p>
<p>Further adjustments made to the data: None.</p>

10.2.3 Motor vehicles prices

Name of data source: Registrations of Motor Vehicles by category (Road Transport Department) and Consumer Price Index (ECOICOP classification), for Transport category (Statistical Service of Cyprus).
Organization collecting the data, and purposes for which it is collected: The organization collecting the data is Statistical Service and the purpose is to calculate the private consumption expenditure and the gross capital formation for vehicles.
Reporting units: The reporting units are all the vehicles (new and used) which had been registered in the year.
Periodicity: Annual
Variables collected: Number of new and used vehicles that had been registered in the year by make, type and cubic capacity and the Consumer Price Index for Transport category.
Methods used to allow for missing data: No missing data
Further adjustments made to the data: None

10.2.4 Building permits and housing survey

Name of survey: Building Permits and Housing Survey. The Building Permits and Housing Survey is an annual survey and is carried out on a sample basis, covering the building permits authorized by the Municipalities and District Administration Offices of the Ministry of Interior.
Link to surveys undertaken at the European level: None.
Reporting units: Projects described on the building permits
Periodicity: Annual.
Time of availability of results: 9 months after the end of the data collection period.
Sampling frame: Projects described on the building permits, which include addition of covered area, authorised by the local authorities (Municipalities and District Administration Offices).
Survey is compulsory or voluntary? Compulsory.
Main features of survey methodology: Personal interviews using paper questionnaires. PPS stratified on surface area, type of project and administrative district.
Population size: 8367 building permits.
Sample size: 1740 building permits.
Survey response rate: 100%.
Method used to impute for missing data: No missing data.
Variable used for grossing-up to the population: = (Number of building permits in each Area-Type of Project group of the Population) / (Number of building permits in each Area-Type of Project group in the Sample)
Main variables collected: Characteristics of the project, Demolitions, Stages of Construction, Expenditure in Construction, type of buildings completed (area, value), Housing units completed (number and area, housing amenities) and Apartment units completed (number and area, apartment amenities).
Further adjustments made to the survey data: None.

10.2.5 Building permits and housing survey (public sector)

Name of data source: For the construction of housing units in Government Housing Schemes and own housing building in Government land, for which no Building Permit is issued, information is collected from the Department of Town Planning and Housing.
Organization collecting the data, and purposes for which it is collected: Department of Town Planning and Housing and District Administration Offices of the Ministry of Interior (respectively).
Reporting units: None.
Periodicity: Annual.
Variables collected: (1) for Government Housing Schemes from the Department of Town Planning and Housing: (i) number of residential units (house, apartment) (ii) number and type of building (iii) number of residential units by number of bedrooms (iv) number of buildings demolished (v) number of residential units demolished (2) for own housing building in Government land from the District Administration Offices of the Ministry of Interior (i) number of residential units by number of bedrooms
Methods used to allow for missing data: None.
Further adjustments made to the data: None.

10.2.6 Balance of payments surveys – for merchanting and services

10.2.6.1 Services survey

Name of survey: Services Survey
Link to surveys undertaken at the European level: N/A
Reporting units: Resident entities acquired/provided services from /to non-residents
Periodicity: Quarterly
Time of availability of results: The relevant quarterly reports are submitted to the Central Bank of Cyprus within 35 working days after the end of the quarter to which they relate.
Sampling frame: Business Register
Survey is compulsory or voluntary? Compulsory (The collection of the statistical data required is governed by the provisions of Regulation (EC) no. 555/2012 of the European Parliament and the Council of 22nd June 2012, the Guideline of the European Central Bank of 30th July 2013 (ECB/2013/25), as amended and sections 63 and 64 of the Central Bank of Cyprus Laws of 2002 - 2014.)
Main features of survey methodology: BPM6 methodology
Population size: Unknown
Sample size: 600 (Companies surveyed under other special surveys are not covered by this Services survey, e.g., insurance companies, shipping companies, Banking Institutions etc.)
Survey response rate: 85%
Method used to impute for missing data: For missing data, we rely on the information extracted from the annual financial statements of the entities filed at the Registrar of Companies and Official Receiver or submitted directly to the Central Bank of Cyprus. However, “big players” always transmit their responses within the deadline.
Variable used for grossing-up to the population: N/A.
Sample coverage, as % in terms of variable used for grossing-up: Unknown
Main variables collected: Transactions on services, compensation of employees and merchanting.
Further adjustments made to the survey data: None

10.2.6.2 Education

Name of survey: Survey on Education
Link to surveys undertaken at the European level: N/A
Reporting units: All colleges/universities in Cyprus
Periodicity: Annual (Data are provided on an academic year basis)
Time of availability of results: Data are collected between three to five months after the end of the reference year and are incorporated in the compilation of the annual balance of payments data for the reference year as well as in the revision of quarterly data for the year.
Sampling frame: Relevant list from the Ministry of Education, Culture, Sport and Youth which is updated on an annual basis - Census
Survey is compulsory or voluntary? Compulsory (The collection of the statistical data required is governed by the provisions of Regulation (EC) no. 555/2012 of the European Parliament and the Council of 22nd June 2012, the Guideline of the European Central Bank of 30th July 2013 (ECB/2013/25), as amended and sections 63 and 64 of the Central Bank of Cyprus Laws of 2002 - 2014).
Main features of survey methodology: BPM6 methodology
Population size: 41
Sample size: 41
Survey response rate: 100%
Method used to impute for missing data: N/A
Variable used for grossing-up to the population: N/A
Sample coverage, as % in terms of variable used for grossing-up: 100%
Main variables collected: Services categories mainly for the compilation of exports of services in the field of educational travel, as well as other services provided/acquired to/from non-residents.
Further adjustments made to the survey data: None

10.2.6.3 Insurance

Name of survey: Survey on Insurance Services
Link to surveys undertaken at the European level: N/A
Reporting units: All insurance companies and insurance brokers registered in Cyprus
Periodicity: Quarterly
Time of availability of results: The relevant quarterly reports are submitted to the Central Bank of Cyprus within 35 working days after the end of the quarter to which they relate.
Sampling frame: Relevant registry of the Insurance Companies Control Service - Census
Survey is compulsory or voluntary? Compulsory (The collection of the statistical data required is governed by the provisions of Regulation (EC) no. 555/2012 of the European Parliament and the Council of 22nd June 2012, the Guideline of the European Central Bank of 30th July 2013 (ECB/2013/25), as amended and sections 63 and 64 of the Central Bank of Cyprus Laws of 2002 - 2014).
Main features of survey methodology: BPM6 methodology
Population size: 31
Sample size: 31
Survey response rate: 100%
Method used to impute for missing data: N/A
Variable used for grossing-up to the population: N/A
Sample coverage, as % in terms of variable used for grossing-up: 100%
Main variables collected: Data mainly for the production of statistics on resident enterprises' economic relations with other countries in the field of insurance services.
Further adjustments made to the survey data: None

10.2.6.4 Ship-management

Name of survey: Survey on the activities of ship-management companies
Link to surveys undertaken at the European level: N/A
Reporting units: All resident companies providing ship-management services to entities that are registered both in Cyprus and abroad.
Periodicity: Semi-annual
Time of availability of results: The relevant semi-annual reports are submitted to the Central Bank of Cyprus within 35 working days after the end of the half year to which they relate.
Sampling frame: Business Register, Cyprus Shipping Chamber Members, Deputy Ministry of Shipping Registry
Survey is compulsory or voluntary? Compulsory (The collection of the statistical data required is governed by the provisions of Regulation (EC) no. 555/2012 of the European Parliament and the Council of 22nd June 2012, the Guideline of the European Central Bank of 30th July 2013 (ECB/2013/25), as amended and sections 63 and 64 of the Central Bank of Cyprus Laws of 2002 - 2014).
Main features of survey methodology: BPM6 methodology
Population size: 40
Sample size: 25 approximately 2.200 vessels/ships
Survey response rate: 100%
Method used to impute for missing data: Financial statements are used for the compilation of the data for the whole population.
Variable used for grossing-up to the population: N/A
Sample coverage, as % in terms of variable used for grossing-up: 75%
Main variables collected: Data collected through the survey include the income from services rendered by the resident reporting entity to ships owned by non-residents of Cyprus and the management fees received from resident foreign owned ship-owning companies whose ships are managed by residents and expenses incurred by resident ship management entities both in Cyprus and abroad.
Further adjustments made to the survey data: None

10.2.6.5 Ship-owning

Name of survey: Survey on the activities of ship-owning companies
Link to surveys undertaken at the European level: N/A
Reporting units: All resident ship-owning companies (i.e., all resident companies that are the economic owner of the vessel/ship).
Periodicity: Annual
Time of availability of results: The relevant annual reports are submitted to the Central Bank of Cyprus within 7 months after the end of the year to which they relate.
Sampling frame: Business Register, Cyprus Shipping Chamber Members, Deputy Ministry of Shipping Registry and IHS International Database.
Survey is compulsory or voluntary? Compulsory (The collection of the statistical data required is governed by the provisions of Regulation (EC) no. 555/2012 of the European Parliament and the Council of 22nd June 2012, the Guideline of the European Central Bank of 30th July 2013 (ECB/2013/25), as amended and sections 63 and 64 of the Central Bank of Cyprus Laws of 2002 - 2014).
Main features of survey methodology: BPM6 methodology
Population size: 900
Sample size: 400 – the most important ones
Survey response rate: 100%
Method used to impute for missing data: Figures are grossed-up based on the type of ship, age and tonnage.
Variable used for grossing-up to the population: type of ship, age and tonnage
Sample coverage, as % in terms of variable used for grossing-up: 70%
Main variables collected: The survey collects data regarding their financial claims/liabilities against/towards non-resident related entities, the acquisition/financing management and chartering of their ship, the value of their ship and their revenue/expense both in Cyprus and abroad.
Further adjustments made to the survey data: None

10.2.7 Scientific research and experimental development (R & D)

Name of survey: Scientific research and experimental development (R & D).
Link to surveys undertaken at the European level: Commission Implementing Regulation (EU) No 995/2012 of 26 October 2012 laying down detailed rules for the implementation of Decision No 1608/2003/EC of the European Parliament and of the Council concerning the production and development of Community statistics on science and technology.
Reporting units: The collection of data is carried out in three phases. The first phase includes all ministries, government departments and services and semi-government organisations. The second phase relates to the private sector and covers business enterprises in all sectors of economic activity, as well as non-profit institutions. The third phase covers the public and private institutions of higher education. A similar, with regard to its structure and content, questionnaire is used for all three phases of the survey, with only minor differences in order to accommodate certain special features of each sector of performance. One of the most important stages of the survey is the identification of the private enterprises and the non-profit institutions which are engaged in R&D activities. Questionnaires are sent to enterprises active in areas which, on the basis of the findings of the previous corresponding surveys, the nature of their work and the experience of other countries, are the most probable to involve an element of research. An important source of data forms information obtained from the Research and Innovation Foundation on the persons/bodies applying for funding from the Programmes for the Financing of Research Projects, as well as reports in the press and articles in industrial journals and research compendia. The survey can be considered as a census in terms of R & D expenditure and personnel.
Periodicity: Annual
Time of availability of results: T + 18 months
Survey is compulsory or voluntary? Survey is compulsory.
Main features of survey methodology: The survey is carried out in accordance to the provisions of the Commission Implementing Regulation (EU) No 995/2012 of 26 October 2012 laying down detailed rules for the implementation of Decision No 1608/2003/EC of the European Parliament and of the Council concerning the production and development of Community statistics on science and technology. It uses the definitions, concepts and methodology of the "Frascati Manual", developed by the Organisation for Economic Co-operation and Development, which forms the proposed standard practice for surveys of R&D and is also used by the Statistical Office of the European Union (Eurostat).
Sample size: Not applicable as the survey can be considered as a census in terms of R & D expenditure and personnel.
Survey response rate: Almost 100 %
Sample coverage, as % in terms of variable used for grossing-up: Not applicable as the survey can be considered as a census in terms of R & D expenditure and personnel.
Main variables collected: Personnel (comprise all persons employed directly on R&D, as well as those providing direct services such as R&D managers, administrators and clerical staff. R&D personnel can be distinguished into three categories: researchers, technicians and other supporting staff) and expenditure (comprise all expenditures (current and capital) performed within a statistical unit or sector of the economy, whatever the source of funds. Expenditures made outside the statistical unit or sector but in support of R&D are also included).
Further adjustments made to the survey data: None

10.3 Statistical surveys and other data sources used for the transition from GDP to GNI.

10.3.1 Survey on external financial statistics

Name of survey: Survey on External Financial Statistics
Link to surveys undertaken at the European level: N/A
Reporting units: Enterprises
Periodicity: Quarterly
Time of availability of results: The relevant quarterly reports are submitted to the Central Bank of Cyprus within 35 working days after the end of the quarter to which they relate.
Sampling frame: Business Register
Survey is compulsory or voluntary? Compulsory (The collection of the statistical data required is governed by the provisions of Regulation (EC) no. 555/2012 of the European Parliament and the Council of 22nd June 2012, the Guideline of the European Central Bank of 30th July 2013 (ECB/2013/25), as amended and sections 63 and 64 of the Central Bank of Cyprus Laws of 2002 - 2014).
Main features of survey methodology: BPM6 methodology
Population size: Unknown
Sample size: 250
Survey response rate: 80%
Method used to impute for missing data: Carry-over stocks (implicitly transactions are assumed to be zero)
Variable used for grossing-up to the population: N/A
Sample coverage, as % in terms of variable used for grossing-up: Unknown
Main variables collected: Financial instruments (positions, transactions, changes other than transactions) in foreign direct investment, other investment and derivatives. The financial instruments concern deposits, debt securities, loans, equity, derivatives, trade credits, other receivables/payables.
Further adjustments made to the survey data: None

10.3.2 Securities holdings statistics

Name of survey: Securities Holding Statistics
Link to surveys undertaken at the European level: N/A
Reporting units: Monetary financial institutions, Investment funds, Insurance Companies, investment firms
Periodicity: Monthly or quarterly depending on the size of each company. Companies covering the 95% of the total market value of the securities holdings of each sector are reporting on a monthly basis. The rest are reporting on a quarterly basis.
Time of availability of results: The relevant monthly reports are submitted to the Central Bank of Cyprus within 15 working days after the end of the month to which they relate.
Sampling frame: Census (includes all relevant licenced entities with non-zero amounts)
Survey is compulsory or voluntary? Compulsory, Regulation ECB/2012/24 concerning statistics on holdings of securities
Main features of survey methodology: BPM6 methodology
Population size: Licenced Monetary financial institutions, Investment funds, Insurance Companies, investment firms
Sample size: 218 – December 2017
Survey response rate: 100%
Method used to impute for missing data: Carry-over stocks
Variable used for grossing-up to the population: N/A
Sample coverage, as % in terms of variable used for grossing-up: N/A
Main variables collected: ISIN, Nominal value/number of shares, Market value per security
Further adjustments made to the survey data: None

10.3.3 Investment funds survey

Name of survey: Investment Funds Survey
Link to surveys undertaken at the European level: N/A
Reporting units: Investment funds
Periodicity: Monthly or quarterly depending on the size of each company. Companies covering the 95% of the total assets of the sector are reporting on a monthly basis. The rest are reporting on a quarterly basis.
Time of availability of results: The relevant monthly reports are submitted to the Central Bank of Cyprus within 15 working days after the end of the month to which they relate.
Sampling frame: Census (includes all relevant licenced entities with non-zero amounts)
Survey is compulsory or voluntary? Compulsory, Regulation ECB/2013/38 concerning statistics on the assets and liabilities of investment funds
Main features of survey methodology: BPM6 methodology
Population size: Licensed Investment Funds
Sample size: 114 – December 2017
Survey response rate: 100%
Method used to impute for missing data: Carry-over stocks
Variable used for grossing-up to the population: N/A
Sample coverage, as % in terms of variable used for grossing-up: N/A
Main variables collected: Balance sheet items
Further adjustments made to the survey data: None

10.3.4 Profit and loss

Name of survey: Survey on selected items of Profit and Loss from MFIs
Link to surveys undertaken at the European level: N/A
Reporting units: All MFIs registered/incorporated in Cyprus
Periodicity: Quarterly
Time of availability of results: The relevant quarterly reports are submitted to the Central Bank of Cyprus within 35 working days after the end of the quarter to which they relate.
Sampling frame: MFIs list compiled by the Central Bank of Cyprus - Census
Survey is compulsory or voluntary? Compulsory (The collection of the statistical data required is governed by the provisions of Regulation (EC) no. 555/2012 of the European Parliament and the Council of 22nd June 2012, the Guideline of the European Central Bank of 30th July 2013 (ECB/2013/25), as amended and sections 63 and 64 of the Central Bank of Cyprus Laws of 2002 - 2014).
Main features of survey methodology: BPM6 methodology
Population size: 31
Sample size: 31
Survey response rate: 100%
Method used to impute for missing data: N/A
Variable used for grossing-up to the population: N/A
Sample coverage, as % in terms of variable used for grossing-up: 100%
Main variables collected: The survey collects data that are necessary for the compilation of services, primary income, capital investments as well as for the calculations of Financial Services Indirectly Measured.
Further adjustments made to the survey data: None