INSTITUTO NACIONAL DE ESTADISTICA

INVENTORY OF SOURCES AND METHODS OF ANNUAL NATIONAL ACCOUNTS - SUPPLY AND USE TABLES

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Chapter 1

Overview of the system of accounts

1 Overview of the system of accounts

1.1 Introduction

1.1.1 MAIN APPROACHES USED

In Spain the annual estimates of Gross Domestic Product (GDP) at current market prices are obtained from the perspective of both production and demand, as well as from that of the primary distribution of income.

This process is based on the SUT compilation for definitive estimates. In advance and provisional estimates, the three approaches are also compiled and balancing process is performed albeit with at a lower level of detail.

Besides, every five years and, when a benchmark revision is disseminated, for year that becomes definitive, the input-output framework is presented fully as the supply and use tables are the input-output tables are compiled and disseminated.

The first results after a reference period offered by the Spanish national accounts are the Quarterly National Accounts: main aggregates (QNA) that are published with an approximate a thirty days lag.[1] The QNA form an integral part of the System of National Accounts of Spain, and therefore are consistent, both methodologically and numerically, with the other parts of the system of accounts. Because of this consistency, based on the estimates of the four quarters (by sum or average, as appropriate to the nature of the aggregate) as at the end of January of year t, there is a first annual estimate of the GDP of year t-1 and of its supply, demand and income components (in addition to employment). This estimate is revised at the end of March, when also Quarterly Sector Accounts for the fourth quarter are released.

Although in January of year t, this first available estimate of the reference year t-1 in terms of quarterly national accounts does not offer a very high degree of detail regarding the aggregates from supply, demand and income, the three approaches are balanced and there are no statistical discrepancies between them.

Actually the first estimate of national annual accounts is published around eight and a half month after the end of the reference period, in mid-September[2] and covers a period of three years, from t-1 to t-3. In this series the former estimates from the reference year's t-1 to t-3 are revised, due to the incorporation of new statistical information which is available from the last completed year and the performance of the balancing among the three approaches to GDP with a more detailed level.

In fact, the level of detail at which the process is performed and offered in the accounts is greater for the earlier years, so that by the year t-3 the supply and use tables are prepared

[1] The exact dates of publication of short-term statistics throughout year t are published on the website of the National Statistics Institute in November of the year t-1

[2] In November of the year t-1, the calendar of structural statistics (those with frequency of up to one year) for the year t is published with information on the month of publication. Later, at least two months in advance, the exact date of its release is made public.

with the breakdown of 124 activities and around140 products in all aggregates except for non-market industries, with 119 products. The published breakdown level consists of 81 industries and 110 products.

The publication of all the series of national non-financial accounts and regional accounts for which the National Statistics Institute is responsible is carried out through its website (www.ine.es).

In particular, the publication of the series of annual national accounts[3] includes, in addition to the disaggregation of the GDP from the perspective of supply, demand and income (as well as detailing the labour input in the economy), the breakdown of transactions from which the Gross National Income and National Net Disposable Income is obtained; the integrated accounts and detailed annual accounts and balanced sheets of non-financial assets for the institutional sectors; the input-output framework (supply and use tables and input-output tables). Finally, this publication is completed with a series of detailed results regarding certain transactions: aggregates by industry, classification of final consumption expenditure of households by purpose, matrices of gross fixed capital formation by industry and asset, balance sheets of non-financial asset by industry and detailed results for the government sector (accounts by subsector, contributions and social benefits by type and institutional sector, final consumption expenditure of government sector by component and subsector, consolidated expenses and revenues of the government sector, current transfers between government sector bodies, classification of government sector spending by COFOG functions and taxes by subsector). All this detailed information helps with the preparation of the macroeconomic analysis by users based on the annual national accounts.

1.1.2 GEOGRAPHICAL COVERAGE

From the point of view of political and administrative organisation, Spanish territory is divided into seventeen autonomous communities (fifteen on the mainland and two island groups, the Balearic Islands and Canary Islands) and two autonomous cities in North Africa (Ceuta and Melilla).

However, from an economic perspective, Spanish territory also includes:

- Free trade zones under Spanish customs control.
- The national airspace, territorial waters and the continental shelf lying in international waters over which the country enjoys exclusive rights.
- The territories in the world used by the Spanish government bodies under political agreements with the governments of the countries in which they are located
- Deposits in international waters beyond the continental shelf of the country exploited by units resident in the territory.

These seventeen geographical territories (plus the extra-regional territory) correspond to level two of the NUTS classification (Nomenclature of Territorial Units for Statistics) for the Spanish territory[4]

[3] https://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735576581

[4] Regulation (EC) No 1059/2003 of the European Parliament and of the Council of 26 May 2003 on the establishment of a common classification of territorial units for statistics (NUTS), amended by Regulations No. 1888/2005; No. 105/2007; No. 176/2007, No. 31/2008

The Spanish national accounts meet this definition of the national economy established by ESA 2010

1.1.3 ORGANISATION AND RESPONSIBILITIES OF INE

The broadest range of legal reference made in Spain to statistical activity is to be found in the Spanish Constitution of 1978, which, in Article 149. 1. 31 provides that the State has exclusive jurisdiction over statistics for state purposes. For its part, Law 12/1989, of 9 May, on Public Statistical Services (LFEP), regulates statistical activity for state purposes under the terms envisaged in Article 149. 1. 31. This law sets out the principles governing statistical activity, regulates the collection of data, its storage and the dissemination of results, institutes the conditions under which response is obligatory, regulates statistical secrecy, introduces the planning of statistical production and regulates the executive and advisory actions of statistical institutions.

The Statistical System of the Central State Administration is responsible for compiling official statistics of the Spanish State (statistics for state purposes), as well as official statistics of the European Statistical System (European Statistics).

Thus, Law 12/1989, of 9 May, on the Public Statistical Services (LFEP) is the basic legal regulation for exercising statistical activity in the Central State Administration. According to the LFEP, public statistical services for the Central State Administration are undertaken by the National Statistics Institute, its units within ministerial departments and any other public entities under it which have been entrusted with that function, and the Higher Council of Statistics. To these must also be added the following bodies: The Interministerial Statistics Commission and the Interterritorial Statistics Committee.

The National Institute of Statistics (INE) is an autonomous administrative body, with judicial personality and its own assets, which is attached to the Ministry of Economy, Trade and Business through the Secretariat of State for the Economic Affairs and Business Support. It is essentially governed by the Law on Public Statistical Function (LFEP, in its Spanish acronym) of May 9, 1989, which regulates statistical activity for state purposes, which is the exclusive competence of the State, and by the Statute approved by Royal Decree 508/2001 of May 11[5].

The Law grants the National Institute of Statistics a prominent role in public statistical activity, expressly entrusting it to carry out large-scale statistical operations, including national accounts.

Also, the law gives the INE competence over the elaboration of the National Statistical Plan project and the Annual Programs that accompany it. The National Statistical Plan is the main ordering instrument for the statistical activity of the General State Administration. It has a validity of four years. The Plan contains the statistics that must be compiled over the four-year period by the services of the General State Administration, or by any other entities dependent on it, and those to be totally or partially carried out with the participation of the autonomous communities and local corporations through cooperation agreements with state statistical services or, where appropriate, in execution of the legal provisions. All the statistics included in the National Statistical Plan are considered statistics for state purposes and are mandatory.

The National Statistical Plan is approved by royal decree. Once approved, it will be updated through the annual programs for its execution, which are also approved by royal decree.

[5] Consolidated text (last modification on March 26, 2015).

The Annual Program includes the actions to be carried out during the year in which the National Statistical Plan is executed, and the forecasts that must thereby be incorporated into the General State Budgets.

Moreover, the law attributes the INE with the following functions: formulation of the National Statistics Plan with the collaboration of Ministerial Departments and the Central Bank; the proposal of common regulations on concepts, statistical units, classifications and codes; and relations on statistics with specialised International Institutions and in particular, with the European Union Statistics Office (EUROSTAT).

Furthermore, as it was mentioned before there are other collegiate bodies with significant competences in statistical matter as: the Higher Statistics Council, the Interministerial Statistics Commission and the Interterritorial Statistics Committee. In all of them the INE plays an important role. INE is also responsible for compiling the Electoral Census.

The current organisation of the National Statistics Institute (INE) is governed by its Statute, established by Royal Decree 176/2015 of 13 March, amending Royal Decree 508/2001.

This Statute (Article 2.2.) also provides that the National Statistics Institute, for the purpose of developing its technical competencies and to ensure the preservation of statistical secrecy, shall enjoy the necessary functional capacity to guarantee its operational impartiality. It shall ensure compliance with the principles set out in Article 2 of Regulation (EC) No 223/2009, of 11 March 2009, of the European Parliament and the Council, on European statistics and their subsequent development in the Code of Good Practice of European Statistics.

According to the Statute of the INE, the Department of National Accounts is dependent on the Presidency of the National Institute of Statistics (INE) and is ranked as a General Subdirectorate. It is charged with the development and implementation of statistical operations of national and regional accounts run by the INE and by the representation of INE in the fields of national and international discussion and decision-related tasks within its competence of Directors of the INE.

According to the current National Statistical Plan, the INE (and so the National Accounts Department) is responsible for the preparation and dissemination of all statistical operations that make up the national and regional accounts system, both annual and quarterly, with the exception of the Public Administration Accounts, which are overseen by the General Intervention of the State Administration (IGAE), and the financial accounts of the institutional sectors of the national economy, which correspond to the Bank of Spain.

Statistical operations of national and regional accounts entrusted to the Accounts Department have always been part of the various versions of the National Statistical Plans since its inception. Currently, these operations, according to the last National Statistical Plan **2021-2024** are:

- Annual National Accounts: main aggregates
- Annual National Accounts: aggregates by industry
- Annual Non Financial Sector Accounts
- Supply and use Tables
- Input Output Tables
- Quarterly National Accounts (main aggregates)

– Quarterly Non Financial Sector Accounts

– Regional Accounts

– Pensions Table

In addition to these National Accounts System products there are also other operations that carried out at the Department of National Accounts of the INE:

- Indices for the Regional Distribution of VAT and Excise Duties on Beer, Alcoholic Beverages and Products Derived Thereof and on Intermediate Products
- Survey on Intermediate Consumption and Investment
- Calculation of the weighted average VAT rate for the annual estimate of the VAT resource base and contributions to the EU budget

1.2 The revision policy and the timetable for revising and finalising the estimates; major revisions since the last version of the GNI inventory

1.2.1 THE REVISION POLICY AND THE TIMETABLE FOR REVISING AND FINALISING THE ESTIMATES

The statistical products that can be considered as a part of the system of national accounts provide a quantitative description of the whole (national or regional) economy, its components and its relations with other economies over a period of time. Their compilation involves the use of a large number of basic statistical sources whose availability, characteristics, composition and quality varies over time.

This dependence that the national accounts have on basic statistical information determines that the estimates of the different operations and aggregates are subject to a routine revision process and also to disaggregation until they become final. Therefore, the more short-term and aggregated the base information is, the more provisional the estimation of the national and regional accounts is.

In this context, we must bear in mind that almost all of the sources of statistical information used for the compilation of national accounts, which are detailed in the chapters of this inventory guide, come under the aegis of the Spanish National Statistical Plan and the Annual Development Programmes of that Plan, which, like national accounts themselves, are mandatory and whose publication schedules are previously set and approved by the applicable Royal Decree. Therefore, there is no risk that the information from these data sources will not be available for the compilation of the national accounts and the estimates of Gross National Income.

Thus, in general, the process of compilation of the national accounts of a given year would be:

Until mid-June, estimates are especially focused on the year t-3, and more specifically on the preparation of the complete supply and use table and the compilation of the accounts of the institutional sectors for this year since all the statistical information for that reporting period is already available at that time. From now on, it is worth noting that, also supply and use tables at previous year's prices for t-3 are being simultaneously compiled. From the moment in which there is data from structural statistics (between March and April for the construction industry, and from mid-June for the rest of the industries), work is done on

the provisional estimate of the reporting year t-2. Production and generation of income account are compiled for most of the industries, and the preparation of the accounts of the institutional sectors begins. Validation of the t-2 data also takes into account the supply-use balances of t-3. Although almost all the structural statistical sources are available and work is done on the corresponding supply-demand-income balances, the components of the supply and use tables are not estimated in full, and therefore this estimate is considered as provisional.

In mid-August, once the results of the Public Sector Accounts developed by the IGAE for the years t-2 and t-1 are known, it is possible to start closing the process of estimating the year t-2 (provisional) and begin to address the estimation of t-1 (as an advance).During the first week of September, the estimate of t-1 is completed, and the relevant comparisons and analyses are made of the series of years: t-3 (final estimate), t-2 (provisional estimate) and t - 1 (advance estimate), including the main aggregates of supply, demand and income, the employment data, and the annual production and generation of income accounts of the institutional sectors. The development of the series of the primary distribution account for the income of the economy as a whole is also completed.

In the second week of September, the national publication of the main results is prepared. In the second half of September the preparation non-financial accounts of the institutional sector is completed and the Quality report of the Gross National Income is drafted. This report is transmitted together with the GNI questionnaire by the 30th of September, in accordance with article 2(2) of the European Parliament and the Council Regulation 2019/516 on the harmonization of gross national income at market prices and repealing Council Directive 89/130/EEC, EURATOM and Council Regulation (EC, EURATOM) No 1287/2003 (GNI Regulation).

Thus, taking the above into account, the revision of the estimates of the Spanish National Accounts is limited to a period of three years. Throughout this period there are four different estimates of the same accounting year, three in terms of Annual National Accounts, until the estimate of a year t becomes final.
The following table summarizes the timetable for publication of the various estimates:

Estimate of year t	Publication date	Approximate lag (1)
In terms of the Quarterly National Accounts	January(advance)/March (revised) of t+1	Approximately 30/90 days
Annual National Accounts (advance)	September of t+1	8 and a half months
Annual National Accounts (provisional)	September of t+2	20 and a half months
Annual National Accounts (final)	September of t+3	32 and a half months

(1) Regarding the end of the reporting period (year t)

Regarding the detail of the information provided for each of the reference years, it is greater in those which are final than in those with a provisional or advance nature. The final estimate includes full information on the supply and use tables and, every five years

from the base year and when the results of a benchmark revision are published, the input-output table of the economy[6].

1.3 Outline of the production approach

1.3.1 INTRODUCTION

Obtaining GDP in terms of output or supply is performed using:

– Gross value added at basic prices of the industries calculated as the difference between output and intermediate consumption.

(+)

– Taxes on products

(-)

– Subsidies on products

1.3.2 FRAMEWORK, STATISTICAL SOURCES AND VALUATION

SNA attempts to use direct methods in all its estimates, in other words, methods based on information sources that refer specifically to the year for which the estimate is made. The sources have to comply with the statistical requirements that guarantee that they are representative and complete.

In relation to this aspect, the coverage of the sources, it should be pointed out that the compilation starting point is to identify the producer units. The reference framework for all the official economic statistics is the Central Business Register (DIRCE) produced by INE: Since 1993, this directory has been the framework within which all of the economic statistics of the INE have been compiled.

The DIRCE contains economic information on *resident enterprises*, their constituent *legal units*, the *local units* where economic activities are carried out and the *enterprise groups* in which the enterprises operate.

Important characteristics recorded in the DIRCE for the units are:

- Identification characteristics: ID numbers, names, addresses
- Demographic characteristics: Date of commencement/cessation of the unit
- Economic/stratification characteristics: Economic activity (NACE), employment, turnover, legal form
- Information on control and ownership relations

This infrastructural tool provides solutions for the National Statistical system under different formats:

- Outputs: Central frames serving for the preparation and co-ordination of economic surveys; central reference for statistical analysis of the business population.

[6] As it happened with reference years 2015 and 2016.

- Products: Representative samples for the business surveys and official dissemination of aggregates.

- Services: A big variety of tailor-made requests, formulated by internal and external users.

The DIRCE covers units which, wholly or partially, exercise an economic activity. There are no restrictions regarding the geographical coverage, the size or the legal form of the units. The special nature of DIRCE makes it possible to ensure that no economically active units that figure in the taxation and/or social security records are missing from these statistical records. In other words, the DIRCE is exhaustive with respect to those units that are economically active. The DIRCE is annually updated and this process affects to the whole population. During each cycle, a structured chain of treatments derived for the input sources is applied. This work plan involves validation rules, editing or improving processes, transformation procedures and adoption of statistical standards. A set of 28 sources is annually received and used in different stages during the maintenance process. So, once the reference framework for the producer units is available, the following step to be taken prior to describing the estimates of GDP is to delimitate the producer units, and thus the industries, drawing a distinction between market and non-market categories. In fact, the sources and methods used in estimating the non-market producer units and industries do ensure that such a delimitation is adequately provided.

The organization responsible for the compilation of Public Administration Accounts and therefore for the application of ESA2010 criteria to delimitate this sector is the Audit Office (IGAE, Ministry of Finance). Significant private non-profit institutions serving households are classified as NPISH or non-financial corporations depending on whether they are identified as market or non-market producer in National Accounts and non-profit institutions serving business are classified as non-financial corporations. Moreover, with regard to non-profit institutions serving households, the delimitation of this sector has been carried out by a working group formed by Business Register and National Accounts experts.

It is also necessary to take into account that all unincorporated enterprises are classified as non-financial corporations. Thus, quasicorporations are not identified in the Spanish National Accounts.

In the Spanish economy, two kind of SPEs are identified:

– Issuing Preferred Shares Entities: data are obtained by the Central Bank from markets (when a new issuer appears Commercial Register is consulted).

– Foreign Values Holding Entities, which are identified by the Central Bank from data on external transactions.

Regarding the type of statistical units used in the production approach, for the institutional sector accounts the relevant unit is the institutional unit and for the industry approach is the Local KAU (Kind of Activity Units).

However, in practice, and depending on the availability of data from basic statistical sources, the units used in the production approach for national accounts and both approaches may be the legal unit.

Regarding the sources used, in the case of the institutional sector of the *Financial Corporations* (S.12), estimates come from business accounts of financial institutions (S.121 and S.122) and other kind of entities (S.123, S.124, most part of S.125 and S.126 subsectors) which are provided by the supervisor organisms and the Central Balance

Sheet of the Central Bank (the rest of entities of S.126 and S127 subsectors); for subsectors S.128 and S.129, information provided by the Insurance and Pension Funds Directorate (accounts of the insurance companies) of the Ministry of Economy, Trade and Business. For *General Government* sector (S.13), Spanish National Accounts integrates the General Government Accounts results, which are compiled by the Audit Office from public accounting of Central Government units, accounts of public corporations and information provided by Autonomous Communities and Local Governments.

Non-financial Corporations (S.11) and *Households* (S.14) sector data come, basically, from a great variety sources already explained in detail in chapter 10: Structural Business Statistics, Accounts for Agriculture, Silviculture; Income and Corporation Tax, Ad hoc surveys, etc.

Finally, NPISH (S.15) data come from individual accounts of a representative sample of units. The valuation criteria adopted by SNA strictly follow the rules of ESA2010:

i) Market output.

This is valued at basic prices. Where the sources of information do not follow this criterion, there will be a need to carry out suitable adjustments in order to obtain this valuation.

As it is pointed out in the next section, when the sources of information are defined in terms of companies' accounting systems, there is a need to re-express the data in terms of the national accounting system, by means of an intermediate conversion system.

ii) Output for own final use.

Valuation of output for own final use has been handled by a specific calculation.

iii) Work-in progress.

In order to correctly valuate inventories of work in progress, semi-finished goods or finished goods, a specific research has been carried out under Action Point A4.

iv) Other non-market output.

The starting point for the definition of this type of output is the delimitation of those units that are non-market. Once this delimitation has been obtained, the output of those non-market producers is equal to total production costs in absence of secondary market output (intermediate consumption, compensation of employees, other net taxes on production and consumption of fixed capital). If non-market producers do have a secondary market output or output for own final use, non-market output is measured residually, i.e. as the difference between total costs (on total output) and the sum of market output and output for own final use.

The accruals principle is ensured for the valuation of output and intermediate consumption.

From the perspective of the market producers yes, because it is one of the principles of the General Accounting Plan.

1.3.3 ROLE OF LEVEL ESTIMATES AND EXTRAPOLATIONS

SNA uses direct methods in almost all its estimates, in other words, methods based on the sources of information that refer specifically to the year for which the estimate is being made. Once these sources have been used, it is also necessary to incorporate a second

process of direct estimation: the incorporation of the adjustments linked to the procedures of exhaustiveness.

From all the detailed information regarding the descriptions of industries in chapter 3, the pre-eminence of direct methods of estimation can be deduced, specifically on those based on surveys, censuses and administrative records.

Also, and since the fundamental method used by the National Accounts of Spain for the data of the base year is to draw up an input/output system, this implies that the starting point for estimating GDP and its components is a level estimate, at current prices in which the different approaches to production, expenditure and income are balanced.

This approach has been stressed in the benchmark year 2019 so that the measurement of GDP and GNI could be complete and exhaustive. Only by means of balancing for the final years at the most detailed level of industry and products in the supply and use tables (and from the appropriate sources of information) is it possible to introduce all those aspects that align the figures with those objectives of exhaustive measurement.

So, for the compilation of final years direct estimation methods and balancing are used.

For those few cases in which the available sources correspond to years that are different from the reference year the calculations are made using extrapolations with indicators related to the variable that it is intended to be measured. Also in reference years which are provisional and advance, supply and use tables are not compiled and so direct information (provisional years) and indirect indicators are used to extrapolate at the most detailed level the figures from the previous year.

1.3.4 MAIN APPROACHES TAKEN WITH RESPECT TO EXHAUSTIVENESS

With regard to the procedures relating to exhaustiveness, we attempt to capture and include in the accounting measurements that part of the economy not recorded in the statistical or administrative sources of information. The procedures contained in the recommendations of the European Union have been followed incorporating such aspects as: cross-check of the employment figures from the economic sources with those from the labour force survey (LFS) in order to detect potential undervaluation; estimation of the levels of output and value added corresponding to those undervaluations, if any, on the basis of hypotheses concerning productivity ratios and/or primary incomes per unit of employment.

Also specific investigations have been carried out into those activities or sectors in which an additional effort to obtain information to incorporate into the measurements of the National Accounts of estimates on certain outputs or incomes which their nature makes more difficult to capture statistically (additional payments or tips in personal service activities, hotels restaurants or certain transportation sectors, real estate activities, etc.).

Besides, methods recommended by EUROSTAT for the treatment of certain activities (for example sub-contracting in construction) have been applied and it has been set up some inter-institutional working groups to analyse sectors of particular importance in the Spanish economy (general government, financial institutions, rest of the world).

1.4 Outline of the income approach

1.4.1 INTRODUCTION

GDP viewed from the income approach reflects the primary income distributed by the resident units of production. That is to say, it is the sum of the compensation of employees, taxes on production and imports less subsidies, gross operating surplus, and mixed income of the total economy.

1.4.2 FRAMEWORK

The different statistical sources used in estimating GDP components in the focus on income are detailed below.

Compensation of employees

In general, all of the economic statistics include data about personnel expenditures, differentiated among their different components, in accordance with the General Chart of Accounts. Additionally, the INE conducts specific surveys on costs incurred by the employer for the use of labour and on average earnings per worker and average number of hours worked, for the different sectors of the economy. This information is gathered in the Annual Survey of the Cost of Labour and the Quarterly Survey of the Cost of Labour.

For those sectors with complete accounting, such as certain financial institutions information from the supervisory bodies that monitor them is available. The budgetary liquidations of the various units comprising general government are also available.

Finally, in the case of households that employ domestic personnel, the estimate of output (see Chapter 3) that corresponds to the compensation of the employees, has been made using specific procedures.

Gross operating surplus and mixed income

These aggregates are implicitly included in all of the economic statistics, given that the latter seek information about every operation that has an impact on the calculation of them (compensation of employees, taxes, subsidies, intermediate consumption and output).

The distinction between operating surplus and mixed income is determined by the legal status of the business, since, as has already been mentioned, DIRCE, the framework used to conduct the surveys distinguishes between businesses having legal personality (corporations) and those belonging to natural persons.

In non-market activities, gross operating surplus is identical to consumption of fixed capital (see Chapter 4). Finally, in the case of the own-account production of housing services by owner-occupiers, the surplus is obtained by means of a specific study carried out on this activity (see Chapter 5).

Taxes on production and imports

The institutions that served as a source for estimating the taxes collected by all public authorities were the Audit Office (IGAE), the Department of Customs and Excise and the Directorate General of the Treasury.

Subsidies

In addition to the sources cited for estimating taxes, the Spanish Agricultural Guarantee Fund (FEGA) under the Ministry of Agriculture, Fisheries and Food, provides information on grants from the European Union.

1.4.3 VALUATION

The sources of information available for the estimate of GDP from the income approach generally use valuation criteria similar to those established in ESA2010. However, it may be noted that in some specific cases (for instance as a portion of remuneration in kind, certain taxes, and insurance transactions) some adjustments are needed for their correct recording in national accounts terms.

1.4.4 TRANSITION FROM PRIVATE ACCOUNTING CONCEPTS TO NATIONAL ACCOUNTS CONCEPTS

The statistical information available for estimating GDP from an income approach comes from business economic statistics as well as fiscal sources. In both cases, the questionnaires are matched to the General Chart of Accounts; therefore in this aspect the information is homogenous.

In the specific case of compensation of employees, the starting point is personnel expenditures and its components in terms of company accounts. Subsequently, the necessary methodological adjustments of these operations are made in order to obtain compensation of employees in accordance with the ESA2010 definition (see Chapter 4).

However, business economic statistics do not just record the total taxes paid by these units, but also gather the details of the principal taxation headings, which makes it possible to carry out the corresponding cross-checks and methodological adjustments.

With respect to operating surplus and mixed income, although it appears implicitly in the statistics, it is generally obtained as a balance, incorporating all of the adjustments made in the transactions that are included in the production and generation of income accounts.

1.4.5 ROLE OF DIRECT AND INDIRECT VALUATION METHODS

For the final reference year the estimates of the components of GDP from the income approach are principally based on surveys and administrative records. However, it may be noted that the consumption of fixed capital of non-market units is estimated from the stock calculated by the Perpetual Inventory Method.

The following table summarises the methods used for the transactions and balancing items.

Transactions and balancing items	Estimating methods
Compensation of employees	Based on: - Surveys - Administrative data
Gross operating surplus and Gross mixed income	- Surveys - Models
Taxes on production and imports	- Administrative data
Subsidies	- Administrative data

1.4.6 ROLE OF LEVEL ESTIMATES AND EXTRAPOLATIONS

The reference made before is also valid for the income approach.

1.4.7 MAIN APPROACHES TAKEN WITH RESPECT TO ESHAUSTIVENESS

The estimates of the base year in the National Accounts of Spain are based on the production of an input/output system (supply and use tables), thus simultaneously making the different approaches of supply, demand, and income compatible.

As with the other approaches to estimating GDP, the National Accounts of Spain follow the guidelines set down in the European context with a view to achieving the greatest possible coverage and exhaustiveness in the figures for the components of income.

The work procedures used to assure exhaustiveness, impacting the components of GDP from the income approach, are the following:

- Use of the employment variable in the estimates for the National Accounts of Spain
- Inclusion of an estimate of tips in those activities where this type of reward is usual
- Wages and salaries in kind of those goods and services provided free of charge or at reduced prices by employers and that are not recorded in the surveys as personnel expenditures
- Taxes recorded according to the accrual principle

1.5 Outline of the expenditure approach

1.5.1 INTRODUCTION

GDP from the expenditure side is defined as the sum of the final uses of goods and services of resident institutional units (final consumption expenditure and gross formation of capital), plus exports and minus imports of goods and services.

The sources used to estimate each of these transactions are described in detail in the following sections.

1.5.2 FRAMEWORK

The estimates of the components of GDP in the expenditure approach come from a big number of different sources. The most relevant for each of the transactions involved are detailed in the following pages.

1.5.2.1 Household final consumption expenditure

Statistical operations compiled by the INE:

- Household Budget Continuous Survey (HBS) Base 2006.
- Statistics on Products in the Trade Sector (EPSC).

– Population and Housing Census 2011, Intercensal Population Estimates and Continuous Household Survey.

– Living Conditions Survey.

– Teaching statistics.

– Health statistics.

– Passenger transport statistics.

Statistics compiled by other institutions

– Balance of Payments (consumption by non-residents in Spain and consumption by residents in the rest of the world)

– Directorate General of Insurance Statistics (provides premiums and claims by insurance lines)

– Annual report of the Spanish National Lotteries

– Vehicle purchase statistics from the Directorate General of Traffic

– Statistics from the Institute for Cinematography and Audiovisual Arts

– Correos (Spanish Postal Service)

– Annual Report of the National Gaming Commission

– Statistics from the Institute for Tourism Studies

– Statistics from the National Social Services Institute

– In addition, it is used as a general source the Statistics on Spanish Foreign Trade.

1.5.2.2 Final consumption expenditure of the NPISHs

The directories used to determine the units belonging to the sector were as follows:

– Central Business Register (DIRCE), compiled by the INE.

– Directory of the Religious Congregations from the Spanish Conference of Religious (CONFER).

– Guide to the Catholic Church by Spanish Episcopal Conference (CEE from its Spanish initials) for churches and similar institutions.

– Registrar of Trade Unions, Professional and Business Associations of the Directorate General of Labour of the Ministry of Labour and Social Economy.

– Registration of Political Associations of the Interior Ministry.

The economic information was obtained from reports and financial reports for the various units within the sector.

1.5.2.3 Final consumption expenditure of the government sector

The estimation of the components of final consumption expenditure of the government sector comes from the Sector Accounts of the General Government compiled by the Audit Office (IGAE).

The information sources used are budgetary settlements, with the highest level of disaggregation, and the Profit and Loss Accounts and balance sheets of those institutional units that become part of the General Government sector as other non-market producers.

1.5.2.4 Gross fixed capital formation

The estimate of the value of Gross Fixed Capital Formation (GFCF) is made up of various assets, each estimated with a different method according to the available base data sources. This estimate is subject to the input-output equilibrium resulting from the preparation of annual Supply and Use Tables.

The main sources of information for the assets estimates are: surveys conducted by the Ministry of Agriculture, Fisheries and Food, the Industrial Products Survey and the Structural Business Statistics by INE, the Construction Industry Structure Survey by the Ministry of Transport and Sustainable Mobility, the Statistics on Products in the Services Sector for those products which can be included within the GFCF (software, originals, services linked to the transfer of ownership of capital goods) and the Statistics on Spanish Foreign Trade[7] drawn up by the Customs Department of the Spanish Tax Agency. It also includes sources for some sectors (or part thereof) that can be considered exhaustive: Financial institutions, Public administrations.

Moreover, it should be noted that the set of sources used to estimate the different industries (economic statistics) collect information on investment expenditure, including a breakdown of products. This happens mainly with the three types of basic sources: the Construction Industry Structure Survey by the Ministry of Transport and Sustainable Mobility, the Structural Business Statistics and Annual Survey of Services by INE.

1.5.2.5 Changes in inventories

The estimation of changes in inventories is calculated mainly from the information on this variable, divided into three categories: finished and work-in-progress goods, goods for resale and materials and other supplies, which are obtained from the Structural Business Survey for manufacturing, trade and services sectors conducted by INE, the Construction Industry Structure Survey by the Ministry of Transport and Sustainable Mobility, statistics by the Ministry of Agriculture, Fisheries and Food, statistics of the Corporation tax and the Personal income from the Spanish Tax Agency, data from Bank of Spain and data from the General Comptroller of the State Administration.

1.5.2.6 Acquisitions, less disposals of valuables

Taking into account the valuables definition in ESA 2010, a detailed review has been made of all products that can be considered to be valuable objects according to their CPAs and NACEs activities. A comprehensive review of sources covering both statistical sources and market studies has also been done.

[7] See sections 5.15 and 5.16 for more information on this statistical source.

The estimation method used has been the commodity flows, as it is the most comprehensive and appropriate given the sources of information available.

1.5.2.7 Exports and imports of goods

The results of the Balance of Payments are integrated in the process of compiling the accounts of the rest of the world. In the case of exports and imports of goods, the primary source of information on the Balance of Payments and National Accounts is the Statistics on the Exchange of Goods between EU States and Statistics on Extra-EU Trade (external trade statistics) compiled by the Department of Customs and Excise of the Spanish Tax Agency.

1.5.2.8 Exports and imports of services

The results of the Balance of Payments are integrated in the process of compiling the accounts of the rest of the world. In the case of exports and imports of services, the primary source of information on the Balance of Payments and National Accounts is the Survey of International Trade in Services, compiled by the INE.

1.5.3 VALUATION

In general, all of the statistics used to estimate the components of demand value products at acquisition prices, the system established in ESA2010. However, it is important to note that in certain specific cases such as changes in inventories and imports of goods, as well as gross capital formation for own use, etc., the necessary adjustments are made for them to be correctly valued, in accordance with the methodology of ESA2010.

1.5.4 TRANSITION FROM PRIVATE ACCOUNTING CONCEPTS TO NATIONAL ACCOUNTS CONCEPTS

Due to the nature of the components of GDP in the focus on costs and their sources of information, it is generally not necessary to make any correspondence between administrative and accounting concepts.

However, in some cases methodological adjustments need to be made. In the case of exports and imports, the other conceptual adjustments refer to goods crossing the borders for being processed/repaired without change in its ownership.

1.5.5 ROLE OF DIRECT AND INDIRECT VALUATION METHODS

In the definitive reference years, the estimates of the transactions involved in GDP from a demand perspective are based, in general, on direct methods and methods subject to the resource-use balance of the Supply and Use Tables (SUTs).

The following figure shows the methods used for each of the transactions.

Methods of estimation

Operations	Methods of estimation
	Based on:
Household final consumption expenditure	▪ Surveys ▪ Statistics ▪ Administrative data
NPISHs final consumption expenditure	▪ Administrative data ▪ Surveys
Final consumption expenditure of the government sector	▪ Administrative data
Acquisitions less disposals of tangible fixed assets	▪ Surveys ▪ Statistics ▪ Administrative data
Increase in non-produced non-financial assets	▪ Surveys ▪ Administrative data
Changes in inventories	▪ Surveys ▪ Administrative data
Exports of goods	▪ Statistics ▪ Administrative data
Exports of services	▪ Statistics ▪ Administrative data
Imports of goods	▪ Statistics ▪ Administrative data
Imports of services	▪ Statistics

1.5.6 ROLE OF LEVEL ESTIMATES AND EXTRAPOLATIONS

The reference made before is also valid for the income approach.

1.5.7 MAIN APPROACHES ADOPTED REGARDING THOROUGHNESS

As in other approaches to estimating GDP, the National Accounts of Spain attempt to achieve the greatest coverage and exhaustiveness in the figures for the components of expenditure.

With respect to the *final consumption expenditure of households* and how it is set out in detail in the corresponding section, all of the procedures for estimating and combining statistical sources that give the greatest coverage of the accounting figures were followed. The following cases may be mentioned:

- Estimates based on alternative sources (supply sources, administrative records, etc.) for certain items which could be undervalued in the HBS, like tobacco, some alcoholic drinks, gambling, etc.

- Use of alternative sources (of supply), like the Retail Trade Survey, combined with HBS, in order to increase their robustness or to confirm the accuracy of the estimates based on HBS.

- Estimating the rents imputed to the owners of dwellings in accordance with the procedure of stratification recommended by the Regulation (EC) 1722-2005 related to the principles for the calculation of housing services.

- Estimating the services of private households with employed persons by means of specific sources (see Chapter 3).

- Introduction of adjustments to ensure the geographical and population coverage of the estimates. The population adjustments are of two types: conversion of the expenditure included in the HBS, aimed at resident households, therefore under a perspective in national terms, to domestic terms; and the inclusion of the expenditure made by collective households (old people's homes, monasteries, convents, etc.). (See Chapter 5.)

Regarding *final consumption expenditure of general government*, it is worth noting that - in addition to stressing the fact that the level of information available makes it possible to evaluate this sector as one of those with the greatest coverage in the entire accounting system- the specific recommendations made in the process of revising the GNP have also been applied.

Among other aspects, it is important to note:

– The coverage of the units included in this sector is complete for the principal subsectors (central government, state government, social security funds). Consequently, the estimates of the variables that factor in the expenditures are based on the data recorded directly in the accounts of the units that comprise the General Government sector.

– The delimitation of the General Government sector has been revised in detail to guarantee the inclusion of all of those units that meet the criteria of the ESA 2010 and of the Manual on General Government Deficit and Debt (2019 edition).

– Specific estimates have been made of all those aspects that may influence the exhaustiveness of the measurements: social transfers in kind; distinction between intermediate consumption and gross fixed capital formation from military investment; consumption of fixed capital; income by market output and other non-market output, etc.

Regarding *final consumption expenditure of NPISH*, it is worth noting that is based on the individual accounts of a representative sample of units by NACE identified as NPISH, grossed up to the total NPISH population by industry. The individual accounts are made up through the individual accounting information available for each component of the sample. The total population of NPISH is delimitated in the Business Register (BR), following the procedure described in section 3.This statistical procedure should guarantee a complete coverage of the economic activity of these non-market units.

Regarding *gross fixed capital formation*, it is worth noting that estimate based on different data sources, subject to the input-output equilibrium resulting from the preparation of annual Supply and Use Tables (SUTs), guarantee a high level of exhaustiveness in the calculations. Only an exhaustiveness adjustment is made for illegal activity (N2) in GFCF in asset AN.1139 related to the machinery used in the production of marijuana.

Regarding *exports and imports*, it is worth noting that the characteristics of the sources of information available to estimate appear to satisfy the requirements of *completeness* demanded. In particular case of imports and exports of goods, the data derived from VAT operations are used in order to effect increases (units beyond the declaration threshold and non-response).

1.6 The balancing or integration procedure and main approaches to validation

The basic features of the process followed in balancing GDP are as follows:

a) Simultaneous balancing of supply/demand/income. All the estimates of GDP for different reference years include the estimation of this aggregate from those three approaches, although the production and expenditure approach are predominant. Also, with breakdowns which may vary depending on the character of the reference year considered (definitive, provisional or advance), overall GDP measurement always implies a balancing process by product and by industry.

b) This balancing process, in the final estimates of the National Accounts of Spain, relies on the input/output system, comprising a supply table and a use table. In the provisional and advance estimates, balancing systems are used under the same philosophy of achieving one single GDP measured from all three different approaches but at a less detailed level of disaggregation.

c) In general terms, there are no restrictions on revising earlier accounting estimates. However, there are controls that allow the revisions to be quantified at the most detailed level and then to ensure that they are not caused by an error of measurement in the current process or a methodological change in the basic data source. Once a significant revision of an aggregate takes place, then it is communicated to users via press releases or explanatory notes in the corresponding part of the web page.

d) The SUT are being currently compiled at current prices and at previous years' prices.

e) A high degree of disaggregation was chosen for the work (see Chapter 6): 102 NACE breakdown for market industries ,distinguishing between S.11 and S.14, ten different NACEs for S.13 and four industries for S.15 and 140 products in all aggregates except for non-market industries, with 119 products. The published estimates comprise 110 products and 81 industries, a level that is adequately backed up by the statistics available.

The fundamental element in the process of balancing the estimates of the National Accounts: an Input-Output system[8] that guarantees simultaneous and standardised estimates of GDP and its components from all three accounting approaches: production, expenditure and income. The system designed attempts to follow the recommendations of ESA2010 as closely as possible by including:

A supply table, with the output and import matrices at basic prices plus the required adjustment columns to obtain the valuation at purchasers' prices.

A use table at purchasers' prices, which contains the three basic matrices (intermediate consumption, final demand, primary inputs) and provides the balances by product and as a result the value added by industry. The cells of the intermediate and final demand matrices are valued at purchasers' prices.

A use table valued at basic prices (in the cells of the intermediate and final demand matrices).

An input-output table (product by product type).

[8] Starting with the estimates corresponding to the year 1985, the INE has drawn up Input-Output tables almost every year.

The creation of such a detailed system requires the availability of statistical information. This entails conducting specific studies to overcome certain shortcomings in the statistical sources (for example regarding the compilation of the NPISH sector accounts and the estimation of its output by industry and product) and also the creation of working groups with other public institutions involved in the production of statistical data when needed. The creation of working groups with the Bank of Spain and with the Audit Office (Ministry of Finance) is worth mentioning at this point. In the first case, the working group has achieved a complete integration of the rest of the world accounts and the Balance of Payments.

Furthermore, in order to study the Public Sector and its associated transactions in greater depth, experts from INE, the Audit Office and the Bank of Spain formed another working group. This co-operation not only facilitates a more accurate assignment of the units by sector, but also brought in elements which improve the quality and reliability of the estimates, by means of cross-checking the results obtained from various, although obviously complementary, approaches and sets of basic information.

On the other hand, the recommendations made by the GNI Committee on the measurement of GNI and its components are taken into account. Although the Input-Output system is the main element in the process of compilation of National Accounts other balancing techniques are used in the time-series of SNA. So:

In those years for which the estimates are considered to be final, the Input-Output system is used, specifically the SUTs.

The SUTs were compiled and balanced at current prices,

As it was pointed out in former paragraphs, currently the SUT are to be compiled at current prices. Calculations in previous years' prices were already made at the most detailed level by operation/product/industry once the final data at current prices were obtained.

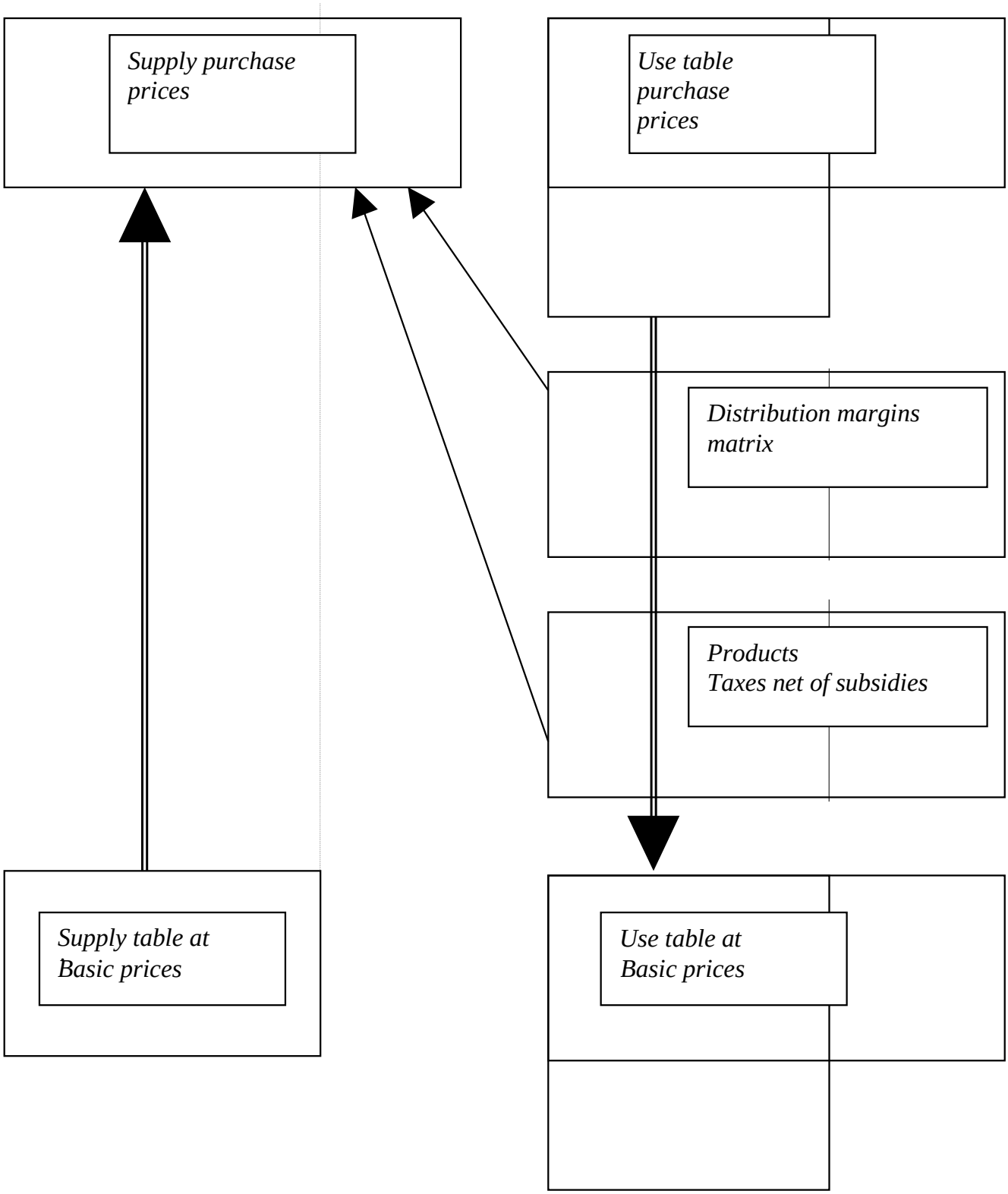
In the case of the non-final estimates of a year of the National Accounts time-series in which an input/output scheme is not drawn up, the accounts of goods and services by product at a less detailed level of disaggregation that the one used for the definitive estimates may form a substitute for the input/output systems, allowing a detailed evaluation of the growth rate at current prices and in volume terms.

In developing the set of supply-use tables, procedures are followed that ensure the supply-use balancing at current prices: both acquisition prices and basic prices. Moreover, it also takes into account the relationship between the results of the supply-use equilibrium with the aggregates of the accounts of the institutional sectors.

All initial estimations for all aggregates include exhaustiveness adjustments, where needed, but it is in the balancing process in which those estimates could have adjustments to reach the equilibrium. A simultaneous balancing for different reference years in ESA-2010 of the three approaches, supply/demand/income, is done since GDP is estimated for the three approaches, although the production and expenditure approaches are predominant.

The Supply and Use Tables were established on the basis of the general criteria referred to above. The balancing process aims to guarantee that the supply/use system is balanced both at purchasers' prices and at basic prices and also procedures are set up to link together the Supply and Use tables and the accounts of the institutional sectors.

The balancing process takes into account the differences in valuation at purchasers' prices and at basic prices, bringing together the two types of valuation when constructing the Supply and Use tables. This approach is shown in the following diagram:



a) The diagram is asymmetric with regard to the valuations used in the initial phases of the two tables; in the case of the supply table the work is based on an initial version at basic prices; in the case of the use table, it is based on an initial version at purchasers' prices.

b) In the supply table work starts by the transcription of the data on output by industry at basic prices into an initial version of the production matrix *products x industries*. Adding imports at CIF valuation to output would provide an initial estimate of the supply table at basic prices.

c) In the case of the use table the initial approach involves transcribing the data of the production and generation of income accounts by industries; the completion of an initial intermediate consumption matrix on the basis of the existing statistics and final demand at purchasers' prices, (exports at FOB valuation).

d) That approach is also related to the usual characteristics of the sources of information: under normal circumstances, data on output by products supplied by the producer units, on the basis of their accounting documents, will be valued at basic prices while imports by products from the statistics on external trade will be valued at CIF; however, the starting data for the use table, (current expenditures of the producer units covered in the business surveys, expenditure on final consumption of households, etc.) will be valued at purchasers' prices -in other words, the distribution margins and taxes on products are included.

e) For some subsets of industries/products the output estimate (and therefore of the data in the supply table) is subsidiary and/or complementary to the estimate of the costs (use table data): this applies for example in the case of o*ther non-market output* related to the non-market units. Here, it is necessary to estimate the costs structure in advance and, subsequently, to identify market output and the output for own final use. Similarly, the output estimate for own final use, both from the supply and demand perspective, implies the automatic balancing of this transaction.

f) The process is finalised by estimating the tax matrices (net of subsidies) on products and the distribution margins, which allow the transition between use at purchasers' prices and use at basic prices.

So, the general philosophy for compiling supply and use tables and their role in estimating national accounts aggregates is the same as that used in previous series. The basic restrictions which affect the balancing process come from the necessity of leaving certain primary sources of information unchanged, as in the case of the figures related to public administrations that are provided by the IGAE, the financial corporations sector and rest of the word sector (provided by the Central Bank). Also, totals estimated for NPISH and illegal activities are, in principle, less subject to revision. Any variation in those figures has to entail a corresponding modification in the national accounts transactions that derive from them.

It should be noted that some market industries on which any change is considered unusual because its estimate for the supply side is known to have been very precise because of the quality of its sources (for example, because the refining sector is concentrated in very few companies, information is obtained from the Industrial Companies Survey and is of high quality as all the companies have been thoroughly researched). Also, there are some products that are not very much used as intermediate consumption which are specially looked at when balancing.

Discrepancies by products are analysed from the perspectives of rows and columns simultaneously. That is, when observing a supply-use imbalance in a product, the aggregates where the highest amounts of the product are concentrated are first analysed, followed by its evolution over the previous year. The qualitative information on the robustness and quality of the various sources of information used for each aggregate is also taken into account. If an atypical annual evolution is found in any aggregates, it is investigated in greater depth and, the findings of this in-depth study used to change the estimate. Sometimes, if the criteria for distribution among certain products are not excessively rigid, products are adjusted without altering the totals of the columns.

The balancing process can lead to improved estimates of some variables. Since the measurement of products forming part of the Gross Fixed Capital Formation (GFCF) assets is generally one of the areas where information is scarce, the balancing of SUTs products improves the estimate in these cases. It is especially relevant in the products that are part of transport equipment and construction assets. In both cases GFCF estimates are made and subsequently reviewed with the data obtained from products in the SUTs at origin and destination. Discrepancies in the products are analysed in great detail and investigations are conducted ad hoc (contacts with the Customs Office or the Audit Office regarding weapons assets, etc.) to verify that the amounts by products in the various aggregates are being measured correctly and with the same periods.

All initial estimates for aggregates (P1 and P2 in market industries) due to the non-observed economy have been produced and entered in the process of compiling the SUTs. During the balancing adjustment process, the output and intermediate consumption of the non-observed economy have also been modified.

Besides, some elements have been included in both sides, supply and use, and, therefore, are balanced, so, they have not suffered any change in the balancing procedure. Those elements are: Subsidies on products (from administrative records), Own-account production, insurance services and FISIM.

Automatic adjustment is quite residual, since as mentioned earlier, detailed serious imbalances are analysed in depth and automatic adjustments are only made when the amounts of imbalance by products are not very high and intermediate consumption of the products with imbalances are comparatively high and are distributed evenly across all the industries. These automatic adjustments are only made once the total imbalance is zero, and apply to the intermediate consumption for market industries by products.

To conclude, as stated in the ESA 2010, “the input/output framework of the economy provides an ideal setting for balancing supply and demand, facilitating the integrated estimate of the Gross Domestic Product of the economy, at both current and constant prices”. Moreover, “these tables enable the logic and coherence of the components of the national accounts to be examined in a single detailed chart and, by incorporating the components into it the three approaches used to measure gross domestic product (production, income and expenses), it allows for a single estimate of the GDP”.

Therefore, it is considered essential to make a full estimate of all aggregates within the Input-Output framework to obtain a robust estimate of GDP in the three approaches. The balancing, integration and validation processes of all figures are considered essential.

1.9 Main classifications used

For the output approach, the CNAE 2009 (NACE Rev 2) is used for industries and CPA 2008 for products.

Specifically, the 2-digit NACE Rev.2 in the A88 grouping is used as the general level of detail for the compilation of non-market (General government, NPISH) and market components, both in the supply and in the income approach. Some specific analysis at 3-digit NACE are carried out in the following activities: Industry (NACE C101, C105), Construction (NACE F4110, F4121, F4122), Transport (NACE H493, H494, H495), Accommodation and food services (NACE I551), Publishing activities (NACE J581, J582), Real Estate and Activities of Head Offices (NACE M701, M702).In the case of the expenditure approach, regarding the household final consumption expenditure the COICOP is used at a level of 4 digits categories. Government final consumption expenditure by function (COFOG) is compiled according two levels of breakdown (01.1-...-10.8), while gross fixed capital formation and NPISH final consumption expenditure is calculated at two digits of the NACE Rev.2 except for some specific industries where compilation are carried out at the 3-digit level, such as Industry (NACE C105), Construction (NACE F4110, F4121, F4122) or Transport (NACE H493, H494, H495).

Regarding imports and exports:

- The source for the classification of goods is the Foreign Trade Statistics (FTS) provided by the Customs Agency. The merchandise code has eight digits and is classified according to the Combined Nomenclature, while the subsequent conversion to Classification of Products by Activity (CPA) is first carried out at 6-digit level and then finally grouped into 119 products.

- The source which is used for the classification of services is the International Trade in Services Survey (ITSS). This survey uses the Extended Balance of Payments Services Classification (EBOPs 2010) classification of services and the conversion to Classification of Products by Activity (CPA) is first carried out at 2-digit and 3-digit level.

In the case of the income approach, the 2-digit NACE Rev.2 in the A88 grouping is used.

Finally, regarding the Supply and Use tables, the level of aggregation used for work process in the Spanish SUT is 119 products and 85 industries, mixing almost evenly two- and three-digit codes from Classification of Products by Activity (CPA).

1.10 Main data sources used

The list of the main ones is the next:

- Balance of Payments / Central Bank
- Construction Industry Structure Survey(EEC) / Ministry of Transport and Sustainable Mobility
- Economic Accounts of Agriculture (CEA) / Ministry of Agriculture, Fisheries and Food (MAPA)
- Financial Accounts of the Institutional Sectors / Central Bank
- Household Budget Survey / INE

– Structural Business Survey (SBS) / INE

– Industrial Products Survey (EIP) / INE

– Public Sector Accounts / IGAE

– Statistics on Products in the Services Sector (Legal Services, Industrial Cleaning, Wholesale, Retail, Market Research and Public Opinion Polling services, Selection and Placement Services, Postal Services, Advertising Services, Technical Services, Rail Transport, Maritime and Inland Waterways Transport, Transport of Goods by Road, Urban and Intercity Passenger Transport, Sale and Repair of Motor Vehicles, Air Transport, Travel Agencies and Tour Operator Services, Hosting Services, Audiovisual Services, Economic Consulting and Advisory Services, IT Services, Trade, Transportation by Taxi) / INE

– Statistics on Products in the Trade Sector / INE

– Annual Survey of Trade / INE

Chapter 2

The revision policy and the timetable for revising and finalizing estimates

2 The revision policy and the timetable for revising and finalizing estimates

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

2.1.1 POLICY FOR CURRENT REVISIONS

As it has already been mentioned in chapter 1, the statistical products that can be considered as a part of the system of national accounts provide a quantitative description of the whole (national or regional) economy, its components and its relations with other economies over a period of time. Their compilation involves the use of a large number of basic statistical sources whose availability, characteristics, composition and quality varies over time.

The dependence that the national accounts have on basic statistical information determines that the estimates of the different operations and aggregates are subject to a routine revision process and also to disaggregation until they become final. Therefore, the more short-term and aggregated the base information is, the more provisional the estimation of the national and regional accounts is.

In this context, we must bear in mind that almost all of the sources of statistical information used for the compilation of national accounts, which are detailed in the chapters of this inventory guide, come under the aegis of the Spanish National Statistical Plan and the Annual Development Programmes of that Plan, which, like national accounts themselves, are mandatory and whose publication schedules are previously set and approved by the applicable Royal Decree. Therefore, there is no risk that the information from these data sources will not be available for the compilation of the national accounts and the estimates of Gross National Income.

Thus, in general, the process of compilation of the national accounts of a given year would be:

Until mid-June, estimates are especially focused on the year t-3, and more specifically on the preparation of the complete supply and use table and the compilation of the accounts of the institutional sectors for this year since all the statistical information for that reporting period is already available at that time. From now on, it is worth noting that, also supply and use tables at previous year's prices for t-3 are being simultaneously compiled.

From the moment in which there is data from structural statistics (between March and April for the construction industry, and from mid-June for the rest of the industries), work is done on the provisional estimate of the reporting year t-2. Production and generation of income account are compiled for most of the industries, and the preparation of the accounts of the institutional sectors begins. Validation of the t-2 data also takes into account the supply-use balances of t-3. Although almost all the structural statistical sources are available and work is done on the corresponding supply-demand-income

balances, the components of the supply and use tables are not estimated in full, and therefore this estimate is considered as provisional.

In mid-August, once the results of the Public Sector Accounts developed by the IGAE for the years t-2 and t-1 are known, it is possible to start closing the process of estimating the year t-2 (provisional) and begin to address the estimation of t-1 (as an advance).

During the first week of September, the estimate of t-1 is completed, and the relevant comparisons and analyses are made of the series of years: t-3 (final estimate), t-2 (provisional estimate) and t -1 (advance estimate), including the main aggregates of supply, demand and income, the employment data, and the annual production and generation of income accounts of the institutional sectors. The development of the series of the primary distribution account for the income of the economy as a whole is also completed.

In the second week of September, the national publication of the main results is prepared. In the second half of September the preparation non-financial accounts of the institutional sector is completed and the Quality report of the Gross National Income is drafted. This report is transmitted together with the GNI questionnaire by the 30th of September, in accordance with article 2(2) of the European Parliament and the Council Regulation 2019/516 on the harmonisation of gross national income at market prices and repealing Council Directive 89/130/EEC, EURATOM and Council Regulation (EC, EURATOM) No 1287/2003 (GNI Regulation).

Thus, taking the above into account, the revision of the estimates of the Spanish National Accounts is limited to a period of three years. Throughout this period there are four different estimates of the same accounting year, three in terms of Annual National Accounts, until the estimate of a year t becomes final. So, one of the improvement plans has been implemented: we have moved towards the development of a supply and use table for t-3 (now and in the future both at current and at previous years' prices) that has led to a routine revision policy covering only three years.

The following table summarises the timetable for publication of the various estimates:

Timetable for publication. Publication dates and lag with reporting period

Estimate of year t	Publication date	Approximate lag (1)
In terms of the Quarterly National Accounts	January(advance)/March (revised) of t+1	Approximately 30/90 days
Annual National Accounts (advance)	September of t+1	8 and a half months
Annual National Accounts (provisional)	September of t+2	20 and a half months
Annual National Accounts (final)	September of t+3	32 and a half months

(1) Regarding the end of the reporting period (year t)

Regarding the detail of the information provided for each of the reference years, it is greater in those which are final than in those with a provisional or advance nature. Besides, it is also greater the level of detail (by industry, by category of consumption, etc.) for years furthest from the dissemination year. Thus, the final estimate includes full information on the supply and use tables and, every five years from the base year and when the results of a benchmark revision are published, the input-output table of the economy.

Therefore, one of the main factor that causes revisions from the NA estimates published in previous years is the compilation process that is carried out at a more detailed level of aggregation. The other main factor is the availability of better information (more detailed data, surveys with larger samples or administrative data, updated information, etc.).

Regarding this last factor, in the table below you can find an overview of sources available for each release of Annual National Accounts.

Timetable for publication. Data sources available and publication date

Estimate of year t	Data sources available	Publication date
In terms of the Quarterly National Accounts	Short term statistics	January(advance)/ March (revised) of t+1
Annual National Accounts (advance)	Short term Statistics (updated data) / Some structural statistics (HBS, ASCL, IPS) and provisional data from GG accounts. BoP and Economic Accounts of Agriculture.	September of t+1
Annual National Accounts (provisional)	All structural information (some data are provisional)	September of t+2
Annual National Accounts (final)	Structural information (definite data)	September of t+3

The first release of reference year t corresponds to the aggregation of the four quarters as provided by the Quarterly National Accounts. All the information available regarding year t corresponds to short term statistics. Some of these sources will revised their data in the coming months.

For the advance annual estimate of t that is released in September of year t+1, some structural annual sources are already available: Household Budget Survey (HBS), Industrial Product Survey (IPS), Annual Survey on the Cost of Labour (ASCL). Besides some short term statistics data has been updated from March.

When compiling the provisional estimate for year t (in t+2) all structural basic sources are available, although some data are still provisional.

In September t+3, all definite data are available from all structural sources.

2.1.2 POLICY FOR MAJOR REVISIONS

The accurate measurement of the economic situation means adapting the instruments used to the continuous changes that occur within it. These periodic renewals of the national accounts are traditionally known as benchmark or major regular revisions and their aim is to improve the reliability, completeness and comparability of estimates, by using new sources, procedures and calculation methods.

In line with the recommendations of Eurostat, the revision policy for National Accounts in Spain envisages, as a general rule, major regular revisions every five years.

However, in the context of the compilation of National Accounts, at a given moment in time, there may be certain facts that could lead to consider the possibility of non-regular major revisions. The main two reasons for this kind of revision would be:

– The recent availability of relevant new sources of statistical information

– The need of some methodological changes

Regarding the availability of new sources of information, as a general rule, an assessment on the effect of their incorporation to the compilation process of National Accounts is carried out before using them. If the impact is considered to be non-relevant, then the new sources are incorporated in the current compilation of National Accounts aggregates. On the contrary, if the integration of them imply a significant revision of the estimates, then they are included with the occasion of the next planned major revision or even could influence the decision of carrying out it.

Similarly, methodological changes, as the change of the ESA Regulation, the implementation of ESA amendments (like FISIM Regulation), the revision of the industry and product classifications used for statistical purposes (new versions of NACE, CPA, COICOP, etc.) would entail a benchmark revision.

Thus, since the entry into force of the Regulation of the European System of Accounts 1995, ESA-1995, and until now the benchmark revisions of the Spanish national accounts have used the following reporting years: 1995, 2000, 2008, 2010, 2016 and 2021.

The change to benchmark year 2000 took place in 2005 for the Spanish National Annual Accounts (SNA-2000) and resulted in both methodological and statistical changes[9]. The last version of the inventory guide for GNI data is from 2007 and refers to the sources and methods used in the base 2000 and the changes in this base from the previous base 1995. The impact of rebasing on GDP and GNI for the reporting year 2000 was 3.23% and 3.54% respectively.

Also **the major revision corresponding to reference year 2008**[10], the first results of the Spanish Annual National Accounts (SNA-2008) published in October 2011 involved both statistical and methodological changes.

The main methodological modification that motivated the base change was the addition of new classifications of products and activities, CNAE-2009 and CPA-2008 (consistent with those laid down by Regulations 1893/2006 and 451/2008 of the European Parliament and of the Council, NACE Rev. 2 and CPA-2008) and this was the reason for the slightly longer time interval between the benchmark revisions of 2000 and 2008. The previous base 2000 of the Spanish National Accounts used the NACE Rev. 1.1 classification of activities, consisting in Spain of the National Classification of Economic Activities CNAE-93 and its classification of products by associated activities, CPA. These classifications were the ones that were in effect at the time when the first estimates of base 2000 were published. With the occasion of the change of the benchmark year, a new classification of assets was added to the estimation of the gross fixed capital formation.

Moreover, this benchmark revision also included some changes in the statistical information sources and in the methods for estimating the accounting aggregates which mainly affected the sector accounts and their corresponding aggregates (accounts for the rest of the world, accounts of non-profit institutions serving households, general government sector accounts, better approximation of the figures for final balancing items of financial and non-financial accounts, etc.).

[9] See Press release on the Rebasing of the Spanish National Accounts (19 May 2005). http://www.ine.es/prensa/np373.pdf

[10] See document CNE Base 2008. Methodological characteristics of rebasing (October 2011). http://www.ine.es/daco/daco42/cne00/nota_cambmet_b2008.pdf

However, the combination of statistical and methodological changes cited above had a numerical impact on GDP and GNI (-0.03% and + 0.1% respectively).

On 25 September 2014 the first results of the Annual Spanish National Accounts were published in **base 2010** (SNA-2010). The reason for implementing this major revision at this time is the entry into force of the ESA 2010. With base year 2010, the Spanish national accounts in addition to adapting to the new standard methodology current in the EU, incorporate statistical modifications. The latter relate mainly to the integration of new statistical sources or significant revisions to existing ones, due to the fact that most estimation methods, apart from methodological changes by ESA, remain unchanged from SNA-2008.

In addition to the above changes, mention should be made of the modifications due to reserves over GNI, with particular importance for the impact of transversal reserve VI: inclusion of illegal activities in the national accounts.

On the 16th of September of 2019, the main results of the 2019 Benchmark Revision (2019 BR) of the Spanish National Accounts were published.). On the 30th of September annual sector accounts and aggregates by industry were released. On 12 November Supply and Use tables for reference year 2016 were released. The national publication dates had been announced in advance on the INE web site (structural statistics availability calendar).

The implementation of the 2019 BR in the Spanish National and Regional Accounts follows the recommendations of the harmonized European revision policy (HERP). Given that in 2014 INE disseminated the results of the revised national accounts as part of the implementation of ESA 2010, based on the HERP recommendations, and for the purpose of using the best possible data to calculate GNI for EU's own resources, 2019 was chosen as the dissemination year for the results of Spanish benchmark revision of national and regional accounts and a parallel benchmark revision for BoP/IIP. Besides, consistent time series since 1995 were calculated and disseminated.

It should be taken into account that major revisions in Spanish National Accounts were formerly only of the "major ad hoc revisions" and so for the first time, a regular major revision is conducted.

The implementation of the 2019 BR has brought about some major changes and improvements to sources and methods used for the compilation of national accounts aggregates. The statistical changes that have been incorporated in this 2019 BR of national accounts have their origin in the use and adaptation of new statistical sources (or changes in existing ones) and in the application of new methods and procedures for estimating accounting aggregates.

The benchmark revision 2024 has a threefold objective:

- On the one hand, the statistical sources and estimation methods used for the compilation of national accounts are updated in order to guarantee the timeliness, accuracy and punctuality of these accounts following the recommendations made by Eurostat with the aim of achieving a harmonized policy at European level that ensures that data between Member States are comparable and that, therefore, their use for administrative purposes within the Union is appropriate.
- On the other hand, it complies with the requirements of the updated ESA 2010 data transmission programme.
- Third, the benchmark revision 2024 implements the methodological improvements resulting from the current GNI verification cycle 2020-2024 (a multi-annual verification process of national accounts data that includes dialogue visits by the

Commission to Member States), as well as those resulting from the update of the General Government Deficit and Debt Manual, thus avoiding breaks in series that would otherwise result.

Therefore, and taking up some of the ideas already set out in the previous sections, the benchmark revision, which will affect all publications of national accounts operations as of September 2024, has the following general characteristics:

- This is a revision that, according to the classification of the Committee on Monetary, Financial and Balance of Payments Statistics (CMFB), would be included in the regular extraordinary revision kind. These revisions have their origin in the incorporation of changes in the basic statistical sources and/or in new methods of estimating the aggregates, and should occur regularly (at least every five years).
- Follows the recommendations of Eurostat regarding the establishment of a harmonized revision policy at the European level and the recommendations of the INE revision policy (HERP).
- It affects all the operations of the national accounts prepared by the INE and is carried out in coordination with the Bank of Spain (financial accounts and balance of payments and international investment position statistics) and Audit Office (General Government accounts).
- The reference year for chained volume indices is 2020 (the value of the index in 2020 is equal to 100).
- Its dissemination will take place from September to December 2024. From that moment on, the operations of national accounts will be affected by the usual policy of ordinary revisions (that is, it is three years that are subject to review in the case of annual data and, in the case of quarterly data, the quarters of the current reference year).

The statistical changes incorporated in this revision 2024 of the national accounts originate from the integration of new statistical sources (or relevant changes in the existing ones) and from the application of new methods and procedures for estimating the accounting aggregates.

Main changes due to statistical sources

- In the changes originating in the incorporation of new statistical sources, **the incorporation of the information derived from the 2021 Population and Housing Censuses** must be highlighted.

  This statistical change affects several aggregates of the national accounts, both directly - in those where the Population and Housing Census is used as the basic source - and indirectly, through its impact on household surveys (the Labour Force Survey or the Household Budget Survey) and on the estimates based on them.

  - The incorporation in the BR-2024 of the Spanish National Accounts of the 2021 Census as a source of information for the housing stock implies a change in the estimation of operations related to housing rental production services with respect to those recorded in the current series.

    In this respect, it is necessary to recall that, in the national accounts, by convention, the output of dwelling rental services includes not only rental services relating to

dwellings actually rented, but also those relating to owner-occupied dwellings (imputed rentals).

As regards the valuation of the rental service output of dwellings, the ESA 2010 states that *"the rental service output of owner-occupied dwellings is measured by the estimated value of the rent that a tenant would pay for the same accommodation, taking into account elements such as location, amenities of the area, etc., as well as the size and quality of the dwelling in question".* Furthermore, both the ESA 2010 and the Enforcement Regulation 2021/1949[11] recommend the stratification method for calculating the value of services produced by owner-occupied dwellings. This method combines information on the housing stock, broken down into different strata, with information on the actual rents paid in each stratum for the right to use an unfurnished dwelling of those characteristics.

- On the other hand, some household surveys are the basic source used in the estimates of fundamental aggregates of the system of national accounts. This is the case of the Labour Force Survey (LFS) in relation to the employment variable and the Household Budget Survey (HBS) in reference to household final consumption expenditure. The information on the population, its structure by certain demographic characteristics and the composition of households, is fundamental in these surveys as they use it to raise/calibrate the data obtained for the population as a whole. Thus, the incorporation of the new series of population and households resident in Spain derived from the 2021 Population and Housing Census determines an update of its results. The BR-2024 of the Spanish National and Regional Accounts incorporates the revised results of both surveys[12] .

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[11] *Commission Implementing Regulation (EU) 2021/1949 of 10 November 2021 on the principles for the calculation of dwelling services for the purposes of Regulation (EU) 2019/516 of the European Parliament and of the Council on the harmonisation of gross national income at market prices.*

[12] *In the case of the LFS, homogeneous back series, calculated with the new population base for the period 2021-2023, were provided on 19 April.*

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  The direct and indirect impact of these improvements in sources derived from the 2021 Population and Housing Censuses amounts to 4,407 million euros for the reference year 2021.

- Likewise, the new information available resulting from the **improvement in the coverage of the Structural Survey of Companies by industry**[15] is integrated. In particular, this statistic extended its study scope last year (with reference to the year 2021) including, for the first time, Education and Health activities in its population scope.

  The effect of this improved source coverage through the Structural Business Survey for the reference year 2021 results in a negative impact of -1,153 million euros.

- The information collected through the NSI's **Intermediate Consumption and Investment Survey (ICIS)** is also included. This survey is carried out every four years and its objective is to gain knowledge of the raw materials and other inputs used by the different industries of the Spanish economy in their production processes, as well as the investment made by said industries in the year under study. The information obtained through this survey serves to cover some aspects that are not covered by the Structural Business Survey and which, nevertheless, are necessary for the compilation of several aggregates of the national accounts. Thus, for example, the information obtained for the reference year 2021 is used to update the distribution of intermediate consumption by product in the Supply & Use

[13] *Commission Implementing Regulation (EU) 2021/1949 of 10 November 2021 on the principles for the calculation of dwelling services for the purposes of Regulation (EU) 2019/516 of the European Parliament and of the Council on the harmonisation of gross national income at market prices.*

[14] *In the case of the LFS, homogeneous back series, calculated with the new population base for the period 2021-2023, were provided on 19 April.*

[15] *Consistent with the update of the framework regulation on Business Statistics (Regulation 2019/2152 of the European Parliament and of the Council on European Business Statistics and its implementing act 2020/1197 as regards structural business statistics and statistics on subsidiaries).*

Table, as well as to improve the estimates of gross fixed capital formation for own final use or the recording of travel allowances.

The effect of the implementation of the new information obtained through the Survey of Intermediate Consumption and Investment for the reference year 2021 amounts to 1,101 million euros.

- **Eurostat's recommendations** are implemented regarding the average valuation of transport assets, in relation to the final sale price by type of brand and cylinder capacity, the treatment of special discounts for *Renove* plans and the acquisition of second-hand vehicles (with or without intermediaries). To this end, we have made further use of existing sources of prices and volume such as the General Directorate of Traffic or the Special Tax on Certain Means of Transport.

  The impact of the incorporation of Eurostat's recommendations on the measurement of transport assets amounts to EUR 1,933 million.

- Some **components of the estimation of construction assets**, such as civil engineering end-use, taxes related to construction and installations or repairs, refurbishment and improvements to dwellings and non-residential buildings, are revised based on an extension of existing sources.

  The impact of the improved measurement of these components of the construction assets amounts to EUR 1,081 million.

- The impact of other changes relating to the **extension of information from existing sources** for machinery, biological resources and intellectual property assets (excluding R&D assets) amounts to EUR 1,206 million.

  The combined effect of the changes due to the incorporation of new statistical sources is estimated at 8,575 million euros, a 0.7% increase in nominal GDP by 2021.

Main changes due to estimation methods

Among the changes due to the application of new methods and procedures for estimating the accounting aggregates, there are those resulting from the improvement actions indicated by the European Commission in the framework of the 2020-2024 cycle of verification of the Gross National Income[16] , as well as those arising from the recommendations of the working groups of the European Statistical System[17] , and those resulting from the implementation of the update of the ESA 2010 transmission programme[18] . The most significant are the following:

- Certain parameters used in the **calculation of fixed capital consumption** of some assets are reviewed following the recent recommendations of the European Statistical System Working Group on Fixed Assets and Estimation of Fixed Capital Consumption (depreciation functions, retirement functions and useful lives).

  The impact of incorporating Eurostat recommendations in the measurement of fixed capital consumption is estimated at -144 million euros in the reference year 2021.

- The methods for estimating **stock changes** are revised to bring them in line with those recommended in the Eurostat/OECD Compilation Guide on Stocks.

[16] *Regulation (EU) 2019/516 of the European Parliament and of the Council of 19 March 2019 on the harmonisation of gross national income at market prices.*
[17] *Some in cooperation with the European System of Central Banks.*
[18] *Regulation (EU) 2023/734 of the European Parliament and of the Council of 15 March 2023 amending Regulation (EU) 549/2013.*

The incorporation of Eurostat's recommendations in the methodology for estimating the change in stocks amounts to 2,047 million euros.

- A **new classification** is introduced **for household final consumption expenditure (COICOP 2018**[19]), and a further breakdown in the quarterly publication (according to durability of goods) of this aggregate.

  The implementation of the new COICOP 2018 classification and its further quarterly breakdown has had no impact on the level of nominal GDP.

- **The number of sample units of the Non-Profit Institutions sector** that are used, by means of their elevation to the CBR population framework, in the estimation of the operations of this institutional sector **is extended**.

  The effect of this improved coverage of the non-profit sector serving households results in an impact of EUR 181 million.

- **Information from recent studies** is incorporated **with the aim of updating the parameters** used in some estimates. This is the case of estimates related to certain illegal activities such as prostitution and marijuana or those related to tips received as remuneration in kind by hotel and catering workers.

  The impact of the parameter update on the methods for estimating the illegal economy and tips amounts to EUR 603 million for the reference year 2021.

- The list of products making up the estimate of the **net acquisition of valuables** is updated**,** with an impact of 459 million in the reference year 2021.

- The methodology for estimating **production for own final use of R&D fixed assets** according to the available sources is reviewed, as well as the destination of sales of these assets among intermediate consumption of the industry whose main activity is R&D production or as gross capital formation of other industries of the economy.

  The impact of the update of the R&D asset components amounts to EUR 937 million for the reference year 2021.

- Other changes in the application of new methods and procedures for estimating the accounting aggregates of **the Agriculture and Forestry industry** amount to EUR 251 million.

The combined effect of this update of methods and procedures is estimated at 4,334 million, a 0.4% increase in nominal GDP by 2021.

Other statistical changes

In parallel to the BR-2024 of the Spanish National Accounts, and in a coordinated manner, the revision processes of the Balance of Payments and International Investment Position statistics have been carried out by the Bank of Spain and of the accounts of the Public Administrations by the GCSA.

The results of both revisions are integrated in the BR-2024 of the Spanish National Accounts.

- **Balance of Payments and International Investment Position benchmark revision**

[19] *The Classification of Individual Consumption by Purpose, abbreviated as COICOP, is a classification developed by the United Nations Statistics Division to classify and analyse individual consumption expenditures. In March 2018, the United Nations Statistical Commission considered and approved the revised COICOP classification - COICOP 2018 - as the internationally accepted standard.*

The NSI and the Bank of Spain maintain very close cooperation with respect to the compilation of the Balance of Payments and International Investment Position (BoP/IBP) and the accounts of the rest of the world of the National Accounts through the Balance of Payments/IBP-Rest of the World Accounts Working Group. Both statistical domains, the national accounts and the balance of payments, are furthermore compiled according to accounting standards which, since the implementation of the ESA 2010 and the 6th Balance of Payments and International Investment Position Manual, are consistent with each other.

This cooperation between the NSI and the Banco de España means, on the one hand, that the results of the BoP IIP, compiled and disseminated by the Bank of Spain, are integrated in the national accounts, and on the other hand, that most of the sources and methods used in the compilation of the BoP IIP are jointly agreed and/or designed.

The main changes in this area correspond, on the one hand, to those derived from the reform of the NSI International Trade in Services Survey and, on the other hand, to improvements made in the estimation of the CIF-FOB adjustment[20] and of the import and export of merchandise transport services.

- **Benchmark revision in the accounts of the General Government sector**

  As in the previous case, the General Comptroller of the State Administration (GCSA) has carried out a benchmark revision process of the accounts of the general government sector which it compiles and disseminates. These accounts are integrated into the Spanish National Accounts compiled by the NSI.

  The changes introduced in the results already published on the occasion of the Benchmark Revision 2024 come mainly from the implementation of the new edition of the Government Deficit and Debt Manual[21] , as well as from guidance notes, decisions, etc., resulting from the different working groups on Government Finance Statistics, not yet incorporated in these statistics in order not to affect the comparability of the series.

  These changes, in general, will not have an impact on the government deficit, but will affect the allocation of some transactions. Thus, certain fees and charges and revenues have been analysed and their classification as market output, payments for non-market output, taxes on production or miscellaneous current transfers has been reviewed, where appropriate. The allocation to COFOG divisions of certain general government expenditure is also reviewed, where appropriate. On the other hand, within the framework of the new estimates prepared by the NSI as a consequence of the recommendations issued in other domains (for example, those emanating from the European Statistical System Working Group on Fixed Assets and Estimation of Consumption of Fixed Capital), the affected transactions of the accounts of the General Government sector are revised.

- **Improvements in the measurement of globalization**

  Revisions in sources and methods also include the implementation of improvements in the accounts related to the measurement of globalization based on the work developed by the Large Enterprises Unit Division, recently created in the NSI.

  The combined effect of these other statistical changes has been -EUR 26 million, less than 0.1% of nominal GDP for the year 2021.

  Finally, the ordinary revisions (301 million) to the accounting aggregates for 2021 are insignificant and are mainly due to the incorporation of the final version of the Economic

[20] *Adjustment in the value of imports of goods specific to the input-output framework*
[21] *Manual on Government Deficit and Debt - ESA 2010 implementation. Eurostat, 2022 edition*

Accounts for Agriculture and Forestry and the final compilation of the Supply & Use Table, which involves the completion of the supply-demand balancing process at the level of 94 activities and 140 products, both at current and previous year's prices.

The impact of all these statistical changes for the reference year 2021, in the context of the Benchmark Revision 2024, amounts to EUR **13,184** million, an increase of 1.1% over the previous accounting base level.

Statistical changes in GDP. Year 2021 Benchmark Revision 2024
In EUR million

	TOTAL
Incorporation of information derived from the 2021 Population and Housing Census: owner-occupied housing servic	4.357
Incorporation of information derived from the 2021 Population and Housing Census: other	50
Improvement of the SBS coverage	-1.153
Incorporation of information derived from the ICIS related to own-account GFCF	482
Incorporation of information derived from the ICIS related to daily allowances	521
Incorporation of new sources regarding fixed asset AN.1131 (Transport equipment) and HFCE	1.933
Improvements in the estimation of the components of Construction fixed assets (AN.111, AN.112)	1.081
Other changes in information sources	1.206
TOTAL REVISION DUE TO NEW INFORMATION SOURCES	**8.477**
Revision of parameters used in fixed capital consumption estimation	-144
Revision of methods used to estimate Changes in inventories	2.047
Increase of the sample used for S15 estimates	181
Revision of methods used to estimate acquisition less disposal of valuables	459
Update of the parameters used in certain estimations (prostitution, marijuana production and tips)	492
Update of methods used to estimate own-account GFCF of R+D	937
Crop periodization by crop type (Agriculture)	375
Changes in the valutation of "wood in the rough" output	174
TOTAL REVISION DUE TO NEW METHODS	**4.521**
Statistical revision of the BP and the IIP	-227
Statistical revision of S13 accounts	-104
Improvements in the measurement of globalization	0
TOTAL REVISION DUE TO OTHER CHANGES	**-331**
TOTAL EXTRAORDINARY REVISION	**12.668**
Regular update of the Economic Accounts for Agriculture	301
TOTAL ORDINARY REVISION	**301**
RESIDUAL REVISIONS + BALANCING	215
TOTAL REVISION	**13.184**

In the tables below, differences between different NA series concerning GDP and GNI are shown:

Differences Between SNA-1995 and SNA-2000
Major revision 2000. Spanish National Accounts (SNA)
Units: EUR million and %

BASE	GDP	GNI
SNA 1995	610 541	603 564
SNA 2000	630 263	624 955
Difference	19 722	21 391
Impact (%)	3.2%	3.5%

Differences Between SNA-2000 and SNA-2008

Major revision 2008. Spanish National Accounts (SNA)

Unit: EUR million and %

BASE	GDP	GNI
SNA 2000	1 088 124	1 057 769
SNA 2008	1 087 749	1 058 647
Difference	-375	878
Impact (%)	-0.0%	0.1%

Differences Between SNA-2008 and SNA-2010

Major revision 2010. Spanish National Accounts (SNA)

Unit: EUR million and %

BASE	GDP	GNI
SNA 2008	1 045 620	1 032 235
SNA 2010	1 080 913	1 065 758
Difference	35 293	33 523
Impact (%)	3.4%	3.3%

Differences Between SNA-2010 and 2019 BR

Major revision 2019 (2016 reference year). Spanish National Accounts (SNA)

Unit: EUR million and %

	GDP	GNI
BASE 2010	1 118 743	1 119 735
BR 2019	1 113 840	1 116 592
Difference	-4 903	-3 143
Impact (%)	-0.4%	-0.3%

Differences Between 2019 BR and 2024 BR

Major revision 2024 (2021 reference year). Spanish National Accounts (SNA)

Unit: EUR million and %

	GDP	GNI
BASE 2010	1 235 474	1 231 787
BR 2024	1 222 290	1 243 722
Difference	13 184	11 935
Impact (%)	1.1%	1.0%

Chapter 3

The production approach

3 The production approach

3.0 GDP according to the production approach

This chapter will analyse the procedures used to obtain GDP and the components of it in the National Accounts of Spain for the 2016 benchmark revision (SNA-2016), using the production approach. This entails calculating GDP from Gross Value Added by industry (GVA) -the difference between production and intermediate consumption- and adding taxes less subsidies on products:

- Industries' gross value added at basic prices.

(+)

- Taxes less subsidies on products.

	2016
GVA at basic prices	1.010.688
Taxes on products less subsidies on products	103.152
GDP at market prices	1.113.840

Regarding the output approach, a great variety of statistical sources and administrative records are used to estimate output, intermediate consumption by industry and taxes and subsidies of products.

However, given the different valuation criteria for output established by the ESA 2010, a fundamental aspect to be considered for the estimation of intermediate output and consumption, and therefore value added, is the delimitation of production units between market producers and non-market producers. That delimitation and the correct valuation of output is guaranteed by virtue of the sources and methods used.

As for the units that are non-market producers, on the one hand, insofar as they correspond to the definition and estimation of the Public Sector Accounts, it should be noted that the Audit Office (IGAE) is the agency responsible for the development of the non-financial accounts of this sector, as explicitly stated in the National Statistical Plan, or PEN, in force). In addition, the IGAE, the Central Bank (responsible according to the PEN for the financial accounts of the Spanish economy) and the INE have a permanent methodological framework of collaboration in the working group called the Technical Committee on the National Accounts. Moreover, with regard to non-profit institutions serving households, the delimitation of this sector and other non-market output is determined by INE. The output of non-market producers is valued using total production costs (intermediate

consumption, compensation of employees, other net taxes on production and consumption of fixed capital).If non-market producers do not have a secondary market output or output for own final use, non-market output is valued as the sum of its total production costs; otherwise non-market output is measured residually, i.e. as the difference between total costs (on total output) and the sum of market output and output for own final use

As regards market producers, sources are commonly used whose variables are defined with private accounting criteria, so it is important to establish intermediary systems that allow national accounts aggregates to be obtained from that information.

This is the case of the INE Structural Enterprise Surveys used for the estimation of many branches of activity (Annual Industrial Companies Survey, Annual Survey of Services, Annual Survey of Trade and Survey of the Structure of the Construction Industry).

For industries for which surveys are not available, other surveys or administrative data are used. This is the case of part of the financial sector (data from Bank of Spain) agriculture (data from MAPA), insurance companies (Ministry of Economy, Trade and Business), etc.

3.1 The reference framework

3.1.1 REGISTER OF UNITS USED IN THE PRODUCTION APPROACH

Spanish National Accounts (SNA) attempts to use direct methods in all its estimates, in other words, methods based on information sources that refer specifically to the year for which the estimate is made. The sources have to comply with the statistical requirements that guarantee that they are representative and complete.

In relation to this aspect, the coverage of the sources, it should be pointed out that the compilation starting point is to identify the producer units. The reference framework for all the official economic statistics is the Central Business Register (DIRCE) produced by INE: Since 1993, this directory has been the framework within which all of the economic statistics of the INE have been compiled.

The DIRCE contains economic information on *resident enterprises*, their constituent *legal units*, the *local units* where economic activities are carried out and the *enterprise groups* in which the enterprises operate.

Important **characteristics** recorded in the DIRCE for the units are:

- Identification characteristics: ID numbers, names, addresses
- Demographic characteristics: Date of commencement/cessation of the unit
- Economic/stratification characteristics: Economic activity (NACE), employment, turnover, legal form
- Information on control and ownership relations

This infrastructural tool provides **solutions** for the National Statistical system under different formats:

- Outputs - Central frames serving for the preparation and co-ordination of economic surveys; central reference for statistical analysis of the business population.
- Products - Representative samples for the business surveys and official dissemination of aggregates.
- Services - A big variety of tailor-made requests, formulated by internal and external users.

The DIRCE also plays a central role as a core data source in the development of strategic ESS projects (Euro Groups Register) and other international initiatives (Business Demography statistics, Dynemp Project ...).

3.1.2 COVERAGE OF THE UNITS IN THE BUSINESS REGISTER

The DIRCE covers units which, wholly or partially, exercise an **economic activity.** There are no restrictions regarding the geographical coverage, the size or the legal form of the units. The special nature of DIRCE makes it possible to ensure that, at least in theory, no economically active units that figure in the taxation and/or social security records are missing from these statistical records. In other words, the DIRCE is exhaustive with respect to those units that are economically active.

However, some activities can be under represented, although only very small units are involved (associations, foundations, other no lucrative institutions or agricultural units without employment).

It is important to remark that the Spanish Business Register (DIRCE) has no threshold for size, for geographical coverage or for activity except for some non-market activities involving very small units (units without employment pointed out in the previous paragraph), but DIRCE is not used as framework for non-market producers.

3.1.3 TREATMENT OF UNINCORPORATED ENTERPRISES, PRIVATE NON-PROFIT INSTITUTIONS, NON-PROFIT INSTITUTIONS SERVING BUSINESSES AND NON-MARKET PRODUCERS IN THE REGISTER AND THEIR ALLOCATION TO INSTITUTIONAL SECTORS

The DIRCE production cycle has developed a systematic business process to make operative and maintain the variable ***IS_CODE*** for the whole population of Legal Units. The current modalities, available in the frame of reference 2015, are fully adapted to ESA 2010 (S11001, S11002, S11003, S121, S12201, S12202, S12203, S12301, S12302, S12303, S12401, S12402, S12403, S12501, S12502, S12503, S12601, S12602, S12603, S12701, S12702, S12703, S12801, S12802, S12803, S12901, S12902, S12903, S1311, S1312, S1313, S1314, S14, S15 and S2).

Business Register (BRg) is updated every year. In the National Accounts compilation of every reference year we use the BRg consistent with such year. The frame reference of 2015 the BR was already consistent with ESA 2010 sectors breakdown, and have been in the same way every year.

In this process, specialized input sources are managed, integrated and used. In addition, a set of variables already operative in the DIRCE are used as a support. More specifically, we consider:

- The microdata obtained in the relevant source (a combination of databases listed in the next question, PIDE_SI)

- The main economic activity coding
- The legal form, which is derived from the first character of the national ID
- The control over the unit by a foreign Global Enterprise Group
- The name, for manual checks or validations

A set of predefined deterministic rules has been elaborated, generating an automated coding. These processes are complemented by manual checks, focusing on potential misclassifications units.

All unincorporated enterprises (including quasi-corporations) are classified in the Households sector in the Business Register (thus in the National Accounts).

NPISHs institutional sector is delimitated in the Business Private non-profit institutions that are not identified as NPISH in the Business Register (including non-profit institutions serving businesses) are classified in S.11 or S.12 sector, depending on their main activity.

Information about branches (unincorporated enterprises belonging to a non-resident unit) are identified -for their inclusion in national accounts of your country- through the Business Register, the feedback from the Structural Business Survey and the interaction of the BR with the European Groups Register through the profiling processes. In the same way, this identification is applied to branches abroad belonging to a resident unit -for their exclusion from national accounts-.

3.1.4 MEASURES TAKEN TO UPDATE THE BUSINESS REGISTER

The methodological basis for the updating of the DIRCE is formulated under the denomination of **PIDE** Project (*Proyecto de Integración de Directorios Económicos).* This initiative is based on an intense use of a great variety of input sources. For all of them, NSI has access under micro data fully identified format.

The DIRCE is **annually updated** and this process affects to the **whole population**. During each cycle, a structured chain of treatments derived for the input sources is applied. This work plan involves validation rules, editing or improving processes, transformation procedures and adoption of statistical standards. A set of 28 sources is annually received and used in different stages during the maintenance process. They are listed by PIDE components:

Tax sources of the national territory, excepting País Vasco and Navarra

- Census of Economic Activities Tax
- Pay As You Earn Deductions
- Custom Files (INTRASTAT + EXTRASTAT Registrations)
- VAT, CT and PIT Taxes (turnover micro data file)
- Tax Enterprise Groups
- Import-Export data

Tax sources of the Navarra

- Census of Economic Activities Tax
- Pay As You Earn Deductions

- VAT, CT and PIT Taxes (turnover micro data file)

Social Security sources

- Contribution Accounts of the Social Security Register
- Self Employed Social Security Register

Source of the País Vasco

- Business Register of País Vasco

Private sources

- INFORMA global database
- DUN AND BRADSTREET global database

Sources of the Central Bank

- Balance Sheet Register
- Balance of Payments Register
- Legal Units with Turnover
- List of Special Purpose Entities (Holdings and Headquarters)

Sources for the Institutional Sector

- Institutional Units database of the Audit Office
- Institutional Units database of the Central Bank
- Institutional Public Units Inventory of the Finance Ministry (Local Finance Department)

Statistical sources

- Structural Business Statistics: Services
- Structural Business Statistics: Industry
- Structural Business Statistics: Construction
- Annual Industry Survey
- Annual Construction Survey
- Retail Trade Index
- Services Sector Activity Indicators
- Innovation in Companies Survey
- Survey on ICT (Information and Communication Technologies) and e- commerce use in companies.

When all input sources are properly validated and transformed according to statistical standards, the maintenance of the DIRCE is really carried out.

The different levels of information (statistical units) are definitively updated by means of record linkage routines based on a universal presence of unique national IDs. Micro validation procedures are also undertaken during the different steps of integration.

Several frozen versions of the DIRCE of reference t, are generated during t+1 with different informative capacity, degrees of quality and uses. Definitive frame is produced in October / November of t+1.

3.1.5 TREATMENT OF PRODUCER UNITS NOT OBLIGED TO REGISTER

In Spain, all producer units are obliged to register, with the exception of illegal and underground units. As per Spanish law, all producer units with economic activity are required to register with the Spanish Tax Agency. Therefore, the only producer units that are not obliged to register are households producing goods for own final consumption

These units are taken into account with information from the Households Budget Survey, which asks for these consumptions

On one hand, the tax legislation establishes the accounting obligations of the entrepreneur depending on its legal personality:

- Companies must declare corporate income tax.
- Self-employed workers, communities of goods and civil societies are taxed for Income from Economic Activities in the individual income tax.

On the other hand, the Social Security establishes the obligation to quote from the beginning of the work activity. Workers and employers are registered in one of the following social security schemes:

- General Social Security Scheme
- Special Scheme for Self-Employed Workers
- Special Regime for Coal Mining
- Special regime of the Sea Workers

These registration requirements guarantee the inclusion in DIRCE of all producer units, with the exception of illegal and underground units. With regard to the informal economy, the treatment of this kind of units is not objective of the Business Register.

3.1.6 SPECIAL PURPOSE ENTITIES (SPES)[22]

Information on SPE units is available thanks to the collaboration provided by the Central Bank (See sources listed in PIDE_BC). This Organization develops stable actions for a proper identification of SPEs, according to their sources and applying the guidelines established in the respective international TFs. Micro data files are annually received in the BR Unit and identified in the DIRCE. In addition, CB is considered as the authentic source for this population.

In the Spanish economy, two kind of SPEs are identified:

- Issuing Preferred Shares Entities: data are obtained by the Central Bank from markets (when a new issuer appears Commercial Register is consulted). “Issuing preferred shares entities” belonging to non-financial groups now is reclassified to the non-financial sector due to their lack of autonomy of decision.

[22] Changes are due to the questions raised in the action point B.29.

- Foreign Values Holding Entities, which are identified by the Central Bank from data on external transactions.

3.1.7 STATISTICAL UNITS USED IN THE PRODUCTION APPROACH TO GDP

Regarding the type of statistical units used in the production approach, for the institutional sector accounts the relevant unit is the institutional unit and for the industry approach is the Local Kau of Activity unit (KAUs).

However, in practice, and depending on the availability of data from basic statistical sources, the units used in the production approach for national accounts and both approaches may be the enterprise.

3.1.8 SOURCES USED FOR EACH INSTITUTIONAL SECTOR

In the case of the institutional *sector of the Financial Corporations* (S.12), estimates come from business accounts of financial institutions (S.121 and S.122) and other kind of entities (S.123, S.124, most of S.125 and S.126 subsectors) which are provided by the supervisor organisms and the Central Balance Sheet of the Central Bank (the rest of entities of S.126 and S127 subsectors); for subsectors S.128 and S.129, information provided by the Insurance and Pension Funds Directorate (accounts of the insurance companies) of the Ministry of Economy, Trade and Business.

For *General Government sector* (S.13), Spanish National Accounts integrates the General Government Accounts results, which are compiled by the Audit Office from public accounting of Central Government units, accounts of public corporations and information provided by Autonomous Communities and Local Governments. For *NPISH* (S.15) come from individual accounts of a representative sample of units and information provided from Corporate Tax by the Tax Office

Finally, *Non-financial Corporations* (S.11) and *Households* (S.14) sector data come, basically, from a great variety sources, apart from the ones already mentioned for other sectors (for instance, SBS data for production and generation of income accounts or capital accounts or financial accounts of the institutional sectors in some flows of the income accounts economic surveys).

3.1.9 SOURCES USED FOR THE PRODUCTION APPROACH.

The vast majority of the sources used (surveys and administrative sources) are not only regular but have annual frequency.

With regard to the market producers, the main sources that provide information for the estimation by industries are:

- Annual Statistics:

Structural Business Statistics (EEE).

Construction Industry Structure Survey (EEC)

Economic Survey of Sea Fishing:

Economic Survey of Aquaculture:

Industrial Products Survey

Statistics on Products in the Services Sector

Private Education Financing and Expenditure Survey

Statistics on Health Care Centers

- Administrative Data

Economic Accounts of Agriculture and Forestry

3.1.9.1 Annual Statistics:

Structural Business Statistics (EEE).

- Type of source:

  Continuous survey on an annual basis.

  The legal framework of the Structural Business Statistics (EEE) is the National Statistics Plan.

  This statistic, which is governed by the Regulation 295/2008 of the Parliament and the Council of the European Union, provides information on the structural characteristics of industry, trade and services sector companies, such as size and economic data (income and expenditure), as well as the employment and investment structure.

  In order to improve the structural surveys processes on companies, the "Integration Project of the Structural Business Statistics" was implemented as of the reference year 2015 on. This project intends to use one integrated questionnaire, a harmonized sample design, a joint and simultaneous data collection, the homogenization of the development processes and the simultaneous dissemination for the three sectors of study (Industry, Trade and Services).

- Population scope:

  The SBS is aimed at **all companies**, societies, and individuals whose main activity is in the following sections of the national classification of Economic Activities CNAE-2009:

Industrial sector	B Extractive Industries C Manufacturing Industry D Electric energy, gas, steam and air conditioning supply E Water supply, sewerage, waste management and decontamination	05-09 10-33 35 36-39
Trade sector	G Wholesale and retail business; repair of motor vehicles and motorcycles	
Services sector	H Transport and storage I Accommodation and food service J Information and communications L Real estate activities M Professional, scientific and technical activities N Administrative and support services activities P Education	49-53 55-56 58-63 68 69-75 77-82 85

	Q Health and Social Services R Artistic, recreational and entertainment activities S Other services (except 94 associative activities)	86-88 90-93 95-96

All size classes and all the divisions included in the previous table are covered.

- Geographical scope:

  The entire national territory.

- Reference period:

  The calendar year.

Construction Industry Structure Survey (EEC)

- Type of source:

  Continuous survey on an annual basis.

- Population scope:

  The EEC is aimed at companies and individuals (self-employed worker) whose main activity is in the following sections of the national classification of Economic Activities CNAE-2009:

  - 41.1- Promotion of real estate.
  - 41.2- Construction of buildings.
  - 42.1- Construction of roads and railways, bridges and tunnels.
  - 42.2- Network construction.
  - 42.9- Construction of other civil engineering projects.
  - 43.1- Demolition and preparation of land.
  - 43.2- Electrical installations, plumbing and other installations in construction.
  - 43.3- Finishing of buildings.
  - 43.9- Other specialized construction activities

The criterion used for the stratification was the activity and the business size, measured, the latter variable, by the average annual number of workers and the consideration that they exist or not wage earners.

The size groups are:

- Companies without employees
- Companies with employees:

  1 to 9 workers

  10 to 19 workers

  20 to 49 workers

  50 to 99 workers

  100 to 199 workers

  From 200 to 499 workers

  500 to 999 workers

Of 1000 and more workers

- Geographical scope:

  The entire national territory.

- Reference period:

  The calendar year.

Economic Survey of Sea Fishing:

- Type of source:

  Continuous survey on an annual basis.

- Population scope:

  Set of fishing vessels that in the reference period are authorized to develop the activity of sea fishing, classified in group 03.11 of the National Classification of Activities. All the vessels are considered, regardless of size.

- Geographical scope:

  Set of fishing vessels that in the reference period are authorized to develop the activity of sea fishing, classified in group 03.11 of the National Classification of Activities.

- Reference period:

  The calendar year.

Economic Survey of Aquaculture:

- Type of source:

  Continuous survey on an annual basis.

- Population scope:

  The population under study is the group of establishments with cultivation, which in the reference period were authorized to develop the aquaculture activity, classified in group 03.2 of the National Classification of Activities (CNAE-2009). Therefore, marine aquaculture and inland aquaculture are collected. Called the latter, in CNAE-2009, freshwater aquaculture. The survey framework is formed by the set of establishments authorized to carry out the aquaculture activity, regardless of size.

- Geographical scope:

  The geographical scope of the research is the entire Spanish territory, whether marine or continental.

- Reference period:

  The calendar year.

Industrial Products Survey

- Type of source:

  Continuous survey on an annual basis.

- Population scope:

Industrial establishments belonging to companies with 20 or more employees. In those sectors where the production of these establishments is not representative of the total, it also includes establishments of companies with less than 20 employees.

- Geographical scope:

  The entire national territory except Ceuta and Melilla.

- Reference period:

  Calendar year.

Statistics on Products in the Services Sector

Within the survey Structural Business Statistics (EEE) is a series of annual modules that constitutes the Statistics on Products in the Services Sector and are fundamental to a deeper analysis. For certain activities, an additional questionnaire (module) is included with the main EEE questionnaire to collect complementary information on the characteristics of each industry. Type of source, geographical scope and reference period are the same as in the Structural Business Statistics (EEE).

Regarding the population scope the following industries, according to NACE codes, are investigated:

45, 46, 47
491, 493, 494, 50, 51, 53
551
58, 59, 60, 62, 63
69, 70, 71, 73
78, 79, 81
95

Private Education Financing and Expenditure Survey

- Type of source:

  Five-yearly statistics, whose main objective of the Private education financing and expenditure survey (EFYNIGAS) is to study the structural and economic characteristics of schools that operate in the regulated private education sector. It is a census, except in the stratum corresponding to centers that only provide first cycle of early childhood education

- Population scope:

  Educational centers of private regulated education.

- Geographical scope:

  The entire national territory.

- Reference period:

  The calendar year.

Statistics on Health Care Centers

- Type of source:

  Real statistics with results grouped in tables. The purpose of the survey is to provide annual information on human and material resources, as well as the assistance,

economic and teaching activity (training of resident physicians) of hospitals. It is a census or complete list.

- Population scope:

  Health establishments' inpatient or outpatient, both public and private of all the National Network, where the main purpose of the center is the provision of medical, surgical or medical-surgical assistance. Both the variable "functional dependency" on the SIAE and the variable "public / private ownership" in the classification of the providers of the SCS allows us to delimit this branch of activity between market and non-market units, or more specifically, between output by non-market and market producers according to SEC 2010 §3. 27-3.41.

- Geographical scope:

  The entire national territory.

- Reference period:

  The academic year.

3.1.9.2 Administrative Data

Economic Accounts of Agriculture and Forestry

- Type of source:

  Synthesis statistic, whose fundamental objective is to provide a coherent quantitative description of the whole agricultural and forest activity in Spain.

- Population scope:

  It covers the activities included in division 01 of the NACE-2009 ("Agriculture, livestock, hunting and related services") and division 02 of the NACE-2009 ("Forestry and logging ").

- Geographical scope:

  The entire national territory. It covers the activities included in Geographical scope.

- Reference period:

  Calendar year.

Also, annual economic data on incomes and expenses from Corporation Tax and Income Tax are provided by the Tax Agency on companies classified under NACE code 94.

3.1.9.3 Ad-Hoc Surveys

In addition to these sources, the *National Accounts Department conducts the Intermediate Consumption and Investment Survey (ECII)*. It is a four-year research. The ECII objective is the knowledge of the different raw materials and other inputs used by the Spanish industries in their production processes. The ECII results are used for the estimation of the intermediate consumption in the framework of Supply and Use tables (SUT).

This survey provides a structure of product-disaggregated expenditure for industries in the industrial sector.

3.2 The borderline cases

In relation to borderline cases:

Although detailed information about the treatment of borderline cases can be found under the corresponding heading of the definition it affects (production, intermediate consumption, gross fixed capital formation,...etc.), we can make some general statements of several issues that are not treated in depth in other sections.

In the calculation of output it would be included the GFCF for own final use. Within this production for own final use is included the own-account R&D services.

As regards the acquisition of R&D services, it is always accounted as GFCF except for the NACE 72, where purchases of R&D services are treated as intermediate consumption due to the assumption they are used to produce more R&D services (its principal activity).

The estimate of Entertainment, Literary and Artistic originals is also included in output.

Estimates of the consumption of agricultural and livestock products produced by households from own account are included in the output of NACE Section A. The estimation is based on data from Household Budget Survey. The calculations take into account only the amounts for this concept that are not included in the Economic Agriculture Accounts.

Regarding volunteer activities that result in goods, they are currently not being directly estimated due to the lack of sources of information. We think that apart from not being quantitatively very important, the balancing process for the SUT might have led to an increase of the initial estimate for production due to the information obtained from the use sources that may include the demand of these goods.

With regard to payments in kind, these are included in the account "c649. Other social expenses ", according to the fourth and fifth part of the General Accounting Plan (PGC 2007), that is the Conceptual Framework of Accounting approved by Royal Decree 1514/2007, of November 16.

In return for this expense, the company must record the corresponding income:

- If the remuneration in kind is materialized through goods produced by the company itself or services rendered by the same and correspond to the ordinary activity of the company, the income is recorded as part of the turnover (accounts "c700 Goods for resale sold ", "c701 Finished goods sold " or "c705 Services rendered "), in accordance with the Resolution of the Accounting and Auditing Institute (ICAC) of May 16, 1991.

- Otherwise, the record is posted to the account "c755. Income from services to personnel ", as set out in the fourth and fifth part of PGC 2007.

All these accounts (c700, c701, c705 and c755) are included in the PRODUCTION aggregate (and are excluded from the aggregate INTERMEDIATE CONSUMPTION)..

Products added to the inventories of finished goods less products withdrawn from the inventories of finished goods are included in P.1.
Finished and work-in-progress goods are together because the sources for this information do not separate between those two categories.

It's included in the P.1 estimates all examples of the different forms work-in-progress according to ESA 2010 para 3.148(b), although some amounts like the growth of standing timber are negligible.

Finally, the following borderline cases related to production are included in the Output:

A) Machine tools produced by engineering enterprises: If the machine tools are used as an asset of the company, it is included in the estimation of products for own final use as machinery products. If they are sold, they are accounted as finished products and thus included in the output estimations.

B) *Construction or extensions to dwellings by households and communal construction undertaken by groups of households:* They are included in the total amount of production for own final use in the construction activity NACE F.

C) *Household services produced by employing paid domestic staff:* they are included in the output of industry NACE section T. In accordance with ESA 2010, this production is valued as the remuneration paid to the domestic employee.

In addition, intermediate consumptions is assumed null. Thus, the production and value added of this activity coincide with the compensation of employees (the operating surplus is null). Wages and salaries are estimated through the multiplication of employment figures in the LFS by their annual gross wages for each type of working time. Annual gross wages for each type of working time also come from the LFS, which estimates the annual gross salary per employee based on data from tax agencies and Social Security contribution bases. Besides, Social Security contributions of the employers are estimated according to the legal rates established for each scheme and finally, an adjustment for not observed remuneration in kind for the case of full-time workers is established.

D) *Products bartered:* In the Spanish accounting laws the products bartered have to be registered as a sale and a purchase, so they are registered in the companies' accounts. The most frequent case is that of the exchange of fixed assets, where it is valued according to the acquisition price (less depreciation) or by the market price (plus costs of putting it into operation).

However, we consider it extremely difficult to assess the share of products bartered in the output of industries.

In relation to <u>valuation</u>:

The Resolution of the ICAC of May 16, 1991 specifies that the amount will be that corresponding to the purchase price or cost of production of the goods delivered, or the market value of the service received if this is less than that.

According to the General Accounting Plan, the inclusion of a mark-up in the valuation of goods and services produced by the company itself and delivered as in-kind payments is not clear. Consequently a more in-depth investigation has been carried out. It has been found a case study prepared by the Spanish Association of Accounting and Business Administration (AEAC), which speficies that the value of remuneration in kind will be:

- The purchase price or
- The cost of production of the goods or services delivered, plus the mark-up.

In relation to the products, article 43 of Income Tax Law 35/2006 specifies the following incomes in kind:

- Use of housing
- Use or delivery of vehicles
- Loans with reduced interest rates
- Others

The fifth part (definitions) of the General Accounting Plan specifies for the account 755 "Income for services to personnel" the following content: Income from various services, such as stores, canteens, transportation, housing, etc., provided by the company to its employees.

On the other hand, the Annual Labor Cost Survey (EACL), includes the following components of remuneration in kind:

Company products, housing, company vehicles, loans with rates lower than market rates, restaurant vouchers or checks, checks or childcare expenses, others.

The products added to the inventories of finished goods and work-in-progress are included into production as it can be seen in the intermediary systems described in section 3. Inventories of growing crops, maturing tress maturing livestock for slaughter and the growth of standing timber are also included in the production.

In reference to the distinction between operating and finance leasing, the methodology of the surveys used as source of information for market producers, established that financial leasing is not included in the variables that include the external services, but must be in the investment section of the questionnaire.

According to the General Accounting Plan, in finance leasing, all risks and rewards inherent to ownership of the asset are transferred. This is in the following cases:

1. If the ownership of the asset is transferred to the lessee at the end of the leasing.
2. When the rental period coincides or covers most of the economic life of the active.
3. If the current value of the minimum payments represents an amount practically equal to the fair value of the asset at the beginning of the contract.
4. When the characteristics of the asset object of the contract make that its utility is restricted to the lessee.
5. If the lessee can cancel the contract and the losses to be suffered by the lessor are assumed by the lessee.
6. When the results derived from fluctuations in the fair value of the residual amount fall on the lessee.
7. If the lessee can extend the leasing for a second period, with leasing payments significantly lower than the market.

Operating leasing are all those that cannot be classified as financial leases.

According to the General Accounting Plan, the rent payments for this kind of leasing are included in the item c621 “Leases and royalties “, therefore they are included in Intermediate Consumption. The incomes from renting are included in the item c752 “Income from lease agreements” so they are included in the Market Output.

In case of financial intermediary as lessor, the payments received by the lessor in an operating leasing are registered as output of the industry 64 - Financial service activities, except insurance and pension funding; in case of financial leasing, the fee charged by the lessor and possible FISIM are registered as output of the industry 64 - Financial service activities, except insurance and pension funding.

In the case of General Government activities, finance leasing is not a common practice. Nevertheless, it is annually requested information about operating and finance leasing contracts which have been signed by the General Government by the IGAE, in order to prepare the corresponding accounts. By analyzing the contracts, it is determined to register them as operating or financial leasing, according to ESA2010. The accounting and budgetary information available for the elaboration of the General Government accounts allow for identifying the corresponding amounts.

Information about goods and services used as input into ancillary activities is available. However, all the goods and services supplied by one local KAU to another (and used for intermediate use within the same institutional unit) are very difficult to be measured if it is not being reflected in the corresponding statistical unit (enterprise) accounts.

From the markets producers’ perspective, any company in order to carry out its activities, regardless of its corporate purpose, will incur a series of expenses attached to those activities.

If these activities are carried out outside the company, the related expenses are included in the subgroup c62 of the General Accounting Plan, "External services", which develops the following accounts:

– c620. Research and development expenses for the period: It collects costs of research and development of new products, techniques ... carried out by other companies

– c621. Leases and royalties: Leases: Amounts accrued on rental agreements or operating leases relating to moveable property and immovable property used by or available to the company; Royalties: Fixed or variable amounts paid for the right to use or the concession to use different types of industrial property.

– c622. Repairs and maintenance

– c623. Independent professional services: It collects the accrued expenses for the services rendered to the company by independent professionals. That is, natural persons or legal entities (companies), that do not have a dependency relationship of any kind – an employment relationship, in the case of natural persons - with the company. It includes fees charged by economists, lawyers, auditors, notaries, etc., as well as commissions charged by independent intermediaries.

– c624. Transport: Transport services rendered by third parties on behalf of the company, when these amounts may not be included in the purchase price of the assets or inventories. This account shall also include the transport of items sold.

– c625. Insurance premiums: Amounts paid for insurance premiums, except those relating to company personnel and those of a financial nature.

– c626. Banking and similar services: Amounts paid for banking and similar services that are not considered finance expenses.

– c627. Advertising, publicity and public relations: In this account are recorded amount of expenses paid for advertising, publicity and public relations.

– c628. Utilities: Amounts paid for electricity and any other supplies that cannot be stored.

– c629. Other services: Services not included in the foregoing accounts.

– Except c620, these accounting items are included as summing in the calculation of the intermediate consumption.

When business accounting data are converted to national accounts, business accounting cost data related to insurance expenditure are eliminated and then ESA2010 non-life insurance service charges by NACE division compiled by INE are added.

Hence, life insurance is not included in the intermediate consumption. The total output is allocated to HFCE and exports (the exports are close to zero, though).

If the company itself carries out these ancillary activities:

The expenses in raw materials and supplies used for the ancillary activities are part of the intermediate consumption

The labour costs associated to those employees performing these ancillary activities are part of the remuneration of employees.

It is also included in the calculation of intermediate consumption from the private accounting items, the expenditure by employees, reimbursed by the employer, on items necessary for the employers' production.

The method of calculation of intermediate consumption also prevent from including in it items to be treated as gross capital formation, long term contracts, leases and licenses, wages and salaries in kind.

Moreover, the following borderline cases are included as Intermediate Consumption:

1) *Inexpensive tools despite of service life:* If that tooling or small tools is less than 600 euros per unit, Spanish Accounting Plan (PGC) allows to consider it as a current expense for the year (in the account PGC 629), up to a total of 12,020 euros per year. Given the amounts, it is our understanding that the general practice of companies is to record it that way and in our intermediary system it would be recorded as intermediate consumption.

   However, Spanish PGC also allows to open a joint account for Fixed Assets for all the small tools, (account PGC 214), and their regularization (losses, depreciation, deterioration, etc.) by counting by annual inventory is done through account PGC 659 – Other current management losses. It's extremely difficult to track what percentage is being recorded in one way or another in business accounting.

2) *Subscriptions, contributions or dues paid to non-profit business associations:* These expenses are accounted in the account 629 (Expenses in other external services) from the Spanish General Accounting Plan. This account is considered as intermediate consumption in our intermediary system from business accounting to national accounting.

3) Durable goods of small value: The accounting rules in Spain state that companies are allowed to record durable goods of small value under current expenditure, so it's recorded in intermediate consumption in the national accounts.

To the contrary, the following borderline cases are excluded as Intermediate Consumption:

1) *Use by market or own-account producer units of collective services provided by government units (should be treated as collective consumption expenditure by government):* it is excluded from intermediate consumption of market or own-account producer units. The use of collective services provided by government units is always treated as collective consumption expenditure by government. In addition, these kind of services do not imply payment by the user, so they are not recorded in the companies business account nor considered in our estimations.

   The intermediate demand for the product CPA O84 - Public administration and defence; compulsory social security in the Supply-Use Table is calculated by assigning a percentage that has been consumed by companies only of the transactions P.11 and P.131.

2) *Goods and services produced and consumed within the same accounting period and within the same local KAU (they should not be recorded as part of the output or intermediate consumption of that local KAU):* The production and consumption of these product and services within the same local KAU are not recorded in the companies business accounting.

3) *Payments for government licenses and fees (that should be treated as other taxes on production):* payments for government licenses and fees is always excluded from intermediate consumption. The IGAE (Audit Office) provides us with a complete list of the fees that it considers a payment for a provision of a service (P.11) or is considered a tax (D.214, D.29). In addition, they are recorded in a separate account in the business accounting plan and not included as intermediate consumption in our intermediary system.

4) *Payments for licences for using natural resources -e.g. land- (that should be treated as rents, i.e. as a payment of property income):* they have to be recorded also as rents per the Spanish General Accounting Plan.

Regarding the treatment of the purchases of non-produced assets, for market producers, if these items are purchased from third parties and held as an investment, they are charged to the group of accounts c57 "Cash" and are registered in c20 "Intangible assets ", therefore they are not included in the aggregate intermediate consumption.

With respect to the market producers, the methodology of the surveys used as source of information, established that the value of purchases of patent rights licenses, etc., should be indicated in the section on Investment of the questionnaire when the acquisitions are made in the reference year.

Significant decommissioning projects are individually identified. The annual decommissioning costs are registered (in the year when they take place) as production, gross fixed capital formation and consumption of fixed capital of S.11 sector.

Inventories are valued at cost of acquisition or cost of production: goods for resale, raw materials or other supplies must be valued at the purchase price and work in progress, semi-finished goods or finished goods, will be valued at the cost of production.

The cost of production shall be determined by adding to the purchase price of raw materials and other consumable materials the costs directly attributable to the product. The reasonably proportionate share of costs indirectly attributable to the products concerned must also be added, to the extent that those costs correspond to the period of manufacture.

As it is already established in the General Accounting Plan, enterprises can use both methods, therefore, each enterprise could use the most convenient method.

Livestock is valued at cost of production price of each category, which is obtained from the market price in the wholesalers market being reduced applying to that price a coefficient to discount the profit of the farmer.

3.3 Valuation

The valuation criteria adopted by SNA strictly follow the rules of ESA2010:

i) Market output.

This is valued at basic prices. Where the sources of information do not follow this criterion, there will be a need to carry out suitable adjustments in order to obtain this valuation. When the sources of information are defined in terms of companies' accounting systems, there is a need to re-express the data in terms of the national accounting system, by means of an intermediate conversion system.

No adjustments are made to exports and imports due to valuation of intra-group transactions within MNEs.

ii) Output for own final use.

Valuation of output for own final use has been handled by a specific calculation.

iii) Work-in progress.

Inventories of work in progress, semi-finished goods or finished goods, are valued at costs of production.

Costs of production shall be determined by adding to the purchase price of raw materials and other consumable materials the costs directly attributable to the product. The reasonably proportionate share of costs indirectly attributable to the products concerned must also be added, to the extent that those costs correspond to the period of manufacture.

Livestock is valued at cost of production price of each category, which is obtained from the market price in the wholesalers market being reduced applying to that price a coefficient to discount the profit of the farmer.

iv) Other non-market output.

The output of those non-market producers is equal to total production costs in absence of secondary market output (intermediate consumption, compensation of employees, other net taxes on production and consumption of fixed capital). If non-market producers do have a secondary market output or output for own final use, non-market output is measured residually, i.e. as the difference between total costs (on total output) and the sum of market output and output for own final use.

The accruals principle is ensured for the valuation of domestic output and intermediate consumption:

From the perspective of the market producers yes, because it is one of the principles of the General Accounting Plan.

3.4 Transition from private accounting and administrative concepts to ESA2010 national accounting concepts

In the cases in which sources defined by private accounting criteria are used, there is a need to set up an intermediate systems in order to obtain the aggregates of national accounts.

Market output is estimated as follows:

Market output = + Net turnover
- Consumption of goods for resale
+ Changes in inventories of finished products
+ Other management income
+ Own-account production
+ Subsidies on products
+ Non-observed output

- "Net turnover "and "Other management income" are estimated from data from sources.
- "Subsidies on products" are obtained from administrative records, except for NACE divisions 01, 02 and 03 in which they are obtained from the main source of information.
- "Changes in inventories of finished products", "Own-account production" and "Non-observed output" are obtained as Adjustments.
- Consumption of goods for resale = "Net purchases of goods for resale" -
  - "Changes in inventories of goods for resale"
- "Net purchases of goods for resale" are estimated from sources, "Changes in inventories of goods for resale" are obtained as Adjustments.

In order to avoid double counting when other branches have trade as a secondary activity, the following considerations are taken into account:

Turnover includes sales of products, services rendered and sales of goods for resale.

The final value of the goods for resale includes both:

- The price that the producer has paid to acquire them and
- The margin that has obtained as profit.

(1) "Purchases of goods for resale" is what the current producer has paid for them. However, it is already valued as production for the previous producer (the one who sold it to the current producer). Therefore, what is done to avoid double counting is to subtract this part of the total sales for the current producer.

(2) Accumulated goods for resale that have not yet been sold are also taken into account.

According to these reasons, the following expression is used for the calculation of the production in industries is given by:

Market output	=	Net turnover	–	Net purchases of good for resale [1]
	+	Changes in inventories of finished products	+	Changes in inventories of goods for resale[2]
	+	Own-account production		
	+	Subsidies on products		
	+	Other management income		
	+	Non-observed output		

Consumption of goods for resale	=	Net purchases of goods for resale
	–	Changes in inventories of goods for resale

Therefore, the final expression used is

Market output = + Net turnover
+ Changes in inventories of finished products
+ Own-account production
+ Subsidies on products
+ Other management income
- Consumption of goods for resale
+ Non-observed output

Market Intermediate consumptions =
+ Purchases of raw materials and other supplies
- Changes in inventories of raw materials and other supplies
+ Work performed by other companies
+ External services (except insurance premiums)
- Repairs and maintenance expenditures that are gross capital formation.
+ Cost of the insurance service
+ FISIM
+ Non-observed intermediate consumptions

- "Purchases of raw materials and other supplies", "Work performed by other companies" and "External services (except insurance)" are estimated from data from sources.
- "The Cost of the insurance service" is obtained accordingly to ESA-2010 definitions.
- "Changes in inventories of raw materials and other supplies", "Repairs and maintenance expenditures that are gross capital formation", "FISIM" and "Non-observed intermediate consumption" are obtained as Adjustments.

3.4.1 DATA FROM SURVEYS

It is very important to remark that the National Accounts Department has the microdata of these surveys to obtain the variables and adjustments required in the estimates of the main accounting aggregates for market producers. Data from Surveys are processed in order to:

3.4.1.1 Avoiding Duplicated Units

Taken into account that most of the basic sources for industries investigate market and non-market activities, while National Account figures for industries belonging to S.13 and S.15 are sector accounts based estimation, data from basic sources to estimate market aggregates have been properly adjusted not only eliminating sample units as formerly but also re-estimating grossing up factors[23].

The Audit Office (IGAE) provides to the National Accounts Department a file that contains the identification of public companies (that is companies belonging to sector S.13). (1)

The Spanish Business Register (DIRCE) provide the "Non-profit institutions recognized as independent legal entities" (that is companies belonging to sector S.15). (2)

Both files ((1) and (2)) are crossed with the microdata files so that unis from S.13 and S.15 are eliminated in microdata. Besides, the variable used for grossing-up to the population is corrected in those stratum in which some duplicated unit has been deleted.

3.4.1.2 Calculate components of the aggregates output and intermediate consumption (as mentioned in the previous section)

For the calculation of output and intermediate consumption in terms of National Accounts, an intermediary system is used by means of the data provided by the source. This system shows the relationship between the company accounting concepts (following the General Accounting Plan rules) and the National Accounts ones.

Intermediary system in Industry, Trade and Services

The estimate for the activities included under NACE sections B, C, D, E, G, H, I, J, K, L, M, N, P, Q, R and S (except 94 associative activities) is mainly based on the data provided by the Structural Business Statistics (EEE).

The intermediate system, including the correspondence with the variables of the questionnaire and with the General Accounting Plan is as follows:

OUTPUT (P1)	**SOURCE**	**Variables of the questionnaire**	**Relationship with the General Accounting Plan**
(+) Net turnover	EEE	For Industry (sections B to E): (+) V40100 (Net turnover) - V40130 (Financial Income from Holding Societies) For Commerce and Services (Sections G to S), except NACE 59, 60, 70 : V40100 (Net turnover) for Commerce and Services (Sections G to S),	(+) c700. Goods for resale sold (+) c701. Finished goods sold (+) c702. Semi-finished goods sold (+) c703. By-products and waste sold (+) c704. Containers and packaging sold (+) c705. Services rendered (-) c706. Prompt payment discounts (-) c708. Sales returns and similar transactions (-) c709. Volume discounts

[23] In cooperation with INE Sampling Unit.

OUTPUT (P1)	SOURCE	Variables of the questionnaire	Relationship with the General Accounting Plan
		For NACE 59 + 60 : V40100 (Net turnover) - Subsidies to products obtained from annexed questionnaire (Statistics on Products in the Services) For NACE 7010: V40100 (Net turnover) - Financial Income, obtained from annexed questionnaire (Statistics on Products in the Services)	
(+) Other management income	EEE	(+) V40510 Remainder of operating income	(+) c751. Profit from joint accounts operations (+) c752. Income from lease agreements (+) c753. Income from transfer of industrial property rights (+) c754. Commission income (+) c755. Income from services to personnel (+) c759. Income from other services
(-) Purchase of goods for resale	EEE	(-)V40410 Consumption of goods for resale	(-) c600. Goods for resale purchased (+) c6060. Prompt payment discounts on goods for resale purchased (+) c6080. Returns of goods for resale purchased (+) c6090. Volume discounts on goods for resale purchased

INTERMEDIATE CONSUMPTION (P2)	SOURCE	Variables of the questionnaire	Relationship with the General Accounting Plan
(+) Net Purchases of raw materials and other supplies	EEE	(+) V40420 Consumption of raw materials and other supplies[1] (+) A12220 Final stocks of raw materials and other supplies (-) B12220 Initial stocks of raw materials and other supplies	(+) c601. Raw materials purchased (+) c602. Other supplies purchased (-) c6061. Prompt payment discounts on raw materials purchased (-) c6062. Prompt payment discounts on other supplies purchased (-) c6081. Returns of raw materials purchased (-) c6082. Returns of other supplies purchased (-) c6091. Volume discounts on raw materials purchased (+) c6092. Volume discounts on other supplies purchased
(+) Work performed by other companies	EEE	(+) V40430 Work performed by other companies	(+) c607. Work performed by other companies
(+) External services except insurance premiums	EEE	(+) V40710 Total external services (-) V70701 R&D (-) V70701 Insurance premiums	(+) c621. Leases and royalties (+) c622. Repairs and maintenance (+) c623. Independent professional services

INTERMEDIATE CONSUMPTION (P2)	SOURCE	Variables of the questionnaire	Relationship with the General Accounting Plan
			(+) c624. Transport (+) c626. Banking and similar services (+) c627. Advertising, publicity and public relations (+) c628. Utilities (+) c629. Other services Volume discounts on merchandise purchased

1 Net purchases = Consumption + Changes in inventories = Consumption + Final stocks – Initial stocks

Intermediary system in Construction

The Construction Industry Structure Survey (EEC) supplies data on the principal variables in the construction sector.

Since it was adapted to the General Chart of Accounts for the Construction Companies, and as occurs with other economic surveys, it is easy to establish an intermediate system between the concepts of the survey and those of the National Accounts.

Correspondence with the variables of the questionnaire and with the General Accounting Plan is as follows:

OUTPUT (P1)	SOURCE	Variables of the questionnaire	Relationship with the General Accounting Plan
(+) Net turnover	EEC	(+) G5 Total net sales	(+) c700. Carried out and certified construction (+) c701. Commercial inventories sold. (+) c702. Finished structures sold. (+) c703. By-products and waste sold (+) c705. Services rendered (+) c706. Carried out pending rating (+) c707. Materials sold (+) c708. Sales returns and similar transactions
(+) Other management income	EEC	(+) G15 Other management income	(+) c751. Profit from joint accounts operations (+) c752. Income from lease agreements (+) c753. Income from transfer of industrial property rights. (+) c754. Commission income (+) c755. Income from services to personnel (+) c756. Income from social benefits to temporary union of companies (+) c759. Income from other services
(-) Purchases of goods for resale	EEC	(-) D102 Net purchase of goods for resale	(-) c600. Goods for resale purchased (+) c6080. Returns of goods for resale purchased (+) c6090. Volume discounts on goods for resale purchased

INTERMEDIATE CONSUMPTION (P2)	SOURCE	Variables of the questionnaire	Relationship with the General Accounting Plan
(+) Purchases of raw materials and other supplies	EEC	(+) F1 Net purchase of raw materials and other provisions	(+) c601. Materials and storable elements purchased (+) c602. Other supplies purchased (-) c6081. Returns of materials and storable elements purchased (-) c6082. Returns of other supplies purchased (-) c6091. Volume discounts on materials and storable elements purchased (-) c6092. Volume discounts on other supplies purchased
(+) Work performed by other companies	EEC	(+) F2 Work done by other companies	(+) c606. Work carried out by subcontractors (+) c607. Subcontracted work
(+) External services (except insurance)	EEC	(+) F22 Total external services (–) F12 R&D expenditure (–) F17 Insurance expenditure	(+) c62 Total external services (-) c620. R&D (-) c625. Insurance premiums

Intermediary system in Fishing and aquaculture

Estimates are based in data from the Economic Survey of Aquaculture and Economic Survey of Marine Fisheries.

The intermediate system, including the correspondence with the variables of the questionnaire is as follows:

a) Economic Survey of Aquaculture

OUTPUT (P1)	SOURCE	Variables of the questionnaire	Relationship with the General Accounting Plan
(+) Net turnover	Economic Survey of Aquaculture	(+) AC11 Net Sales Products of Aquaculture (+) AC12 Income from Auxiliary Activities and Rendering of Services	(+) c700. Goods for resale sold (+) c701. Finished goods sold (+) c702. Semi-finished goods sold (+) c703. By-products and waste sold (+) c704. Containers and packaging sold (-) c706. Prompt payment discounts (-) c708. Sales returns and similar transactions (-) c709. Volume discounts (+) c705. Services rendered
(+) Subsidies on products	Economic Survey of Aquaculture	(+) AC17 Subsidies on products	
(+) Other management income	Economic Survey of Aquaculture	(+) AC19 Other management income	(+) C75 Other management income

INTERMEDIATE CONSUMPTION (P2)	SOURCE	Variables of the questionnaire	Relationship with the General Accounting Plan
(+) Purchases of raw materials and other supplies	Economic Survey of Aquaculture	(+) AC23 Net purchase of raw materials and other provisions	(+) c60 Purchases
(+) External services except insurance	Economic Survey of Aquaculture	(+) AC31 Total external services (-) AC32 R&D expenditure (-) AC37 Insurance expenditure	(+) c62 Total external services (-) c620. R&D (-) c625. Insurance premiums

b) Economic Survey of Marine Fisheries

OUTPUT (P1)	SOURCE	Variables of the questionnaire
(+) Net turnover	Economic Survey of Marine Fisheries	(+) PM25 Net sales of fishing products (+) PM22 Income from auxiliary activities and rendering of services
(+) Subsidies on products	Economic Survey of Marine Fisheries	(+) PM30 Subsidies on products
(+) Other management income	Economic Survey of Marine Fisheries	(+) PM27 Other incomes derived from ship's operations (+) PM28 Rent derived from fishing lease or other rights

INTERMEDIATE CONSUMPTION (P2)	SOURCE	Variables of the questionnaire
(+) Purchases of raw materials and other supplies	Economic Survey of Marine Fisheries	(+) PM39 Bate (+) PM40 Salt (+) PM41 Ice (+) PM42 Packages and wrappings (+) PM43 Alimentary products (+) PM44 Beverages (+) PM45 Working clothes (+) PM46 Cleaning items (+) PM47 Gas bottle (+) PM49 Fishing tackles (+) PM50 Spare parts
(+) Work performed by other companies	Economic Survey of Marine Fisheries	(+) PM10 Work performed by other companies
(+) External services except insurance	Economic Survey of Marine Fisheries	(+) PM06 Rentals (+) PM07 Repairs and conservation of fixed assets on ground (+) PM08 Water, gas and electricity (+) PM09 Fees (+) PM12 Transportation and freight +) PM13 Office materials (+) PM14 Communications (+) PM15 Tax, and legal consultancy, computing and publicity (+) PM16 Association fees (+) PM17 Ground personnel travels and allowances (+) PM18 Others (+) PM48 Equipment and machine rental (+) PM51 Ship's repairs and maintenance

INTERMEDIATE CONSUMPTION (P2)	SOURCE	Variables of the questionnaire
		(+) PM52 Lubricant (+) PM53 Fuels (+) PM55 Lease and other fishing rights payments (+) PM56 Communications (+) PM57 Harbour expenses (+) PM58 Harbour fees (+) PM59 Association fees (+) PM60 Licence (+) PM61 Transportation and freight (+) PM62 Travels and allowances (+) PM65 Other expenses

3.4.3 DATA FROM ADJUSTMENTS

The adjustments applied are referred to the following calculations:

3.4.3.1 Validation

Validation adjustments for output (P1):

Adjustment for undervaluation of output (only applied in section I).

Validation adjustments for intermediate consumption (P2):

Adjustment on repairs and maintenance expenditures, consisting in considering that part of these expenditures (included in the intermediate consumption component "external services) are gross capital formation.

3.4.3.2 Conceptual

Conceptual adjustments for output (P1) =

+ Estimate of output produced for own final use
+ Estimate of Entertainment, Literary and Artistic originals
+ Changes in inventories of finished products and goods for resale
+ Subsidies on products (except for NACE divisions 01, 02 and 03)
+ Adjustment to assure the correct valuation of the payments in kind
+ FISIM (only applied for non-market producers)

Conceptual adjustments for intermediate consumption (IC) =

+ Adjustment for insurance (ESA insurance)
+ Changes in inventories of raw materials and other supplies
+ Allocation of FISIM

Some explanation of these adjustments is included below:

– Estimate of output produced for own final use:

In the framework of 2019 BR, this ensure the valuation of this kind of output at the same value as similar products or, in the absence of such information, as a full sum of costs valuation plus a mark-up for the net operating surplus for market producers.

This estimate is described in section 5

– Estimate of Entertainment, Literary and Artistic originals

This estimate is described in section 5.

– Changes in inventories of finished products and goods for resale

This estimate is described in section 5

– Adjustment to assure the correct valuation of the payments in kind:

An estimate for wages and salaries in kind has been applied for the industry "Accommodation and food services", based on employees in each industry and euros per employee and worked day

Also, in order to assure the correct valuation of this aggregate, a mark-up has been included to value goods and services produced by the company itself and delivered as in-kind payments. It is applied in some industries, assuming that 50% of the content of salaries in kind payments correspond to products made by the employer. A 3% mark-up is applied to get them valuated at basic prices. Industries (according to NACE code) in which this adjustment is applied are:

101 Manufacture of meat and meat products

11 Manufacture of beverages

17 Manufacture of paper and paper products

21 Manufacture of basic pharmaceutical products and pharmaceutical preparations

29 Manufacture of motor vehicles, trailers and semi-trailers

35 Electricity, gas, steam and air conditioning supply

36 Water collection, treatment and supply

493E2 Other passenger land transport except taxi

51 Air transport

52 Warehousing and support activities for transportation

551 Hotels and similar accommodation

56 Food and beverage service activities

581 Edition of books, newspapers and other publishing activities

61 Telecommunications

– Subsidies on products:

Subsidies on products within the output aggregate are obtained for all market industries (except for NACE divisions 01, 02 and 03) with information from the Audit Office (IGAE). Subsidies on products are assigned to the industries in which those products are the main ones.

– Adjustment for insurance (ESA insurance)

This adjustment is applied on intermediary consumption to replace the amounts recorded as insurance premiums with the cost of the insurance service.

– Changes in inventories of raw materials and other supplies

This estimate is described in section 5

3.4.3.3 Exhaustiveness

Exhaustiveness adjustments (output for market producers) =

+ N1 underground activity
+ N2 illegal economy
+ N3 output for own final consumption
+ N6 misreporting
+ N7 tips and wages and salaries in kind

Exhaustiveness adjustments (IC for market producers) =

+ N1 underground activity
+ N2 IC from illegal production

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

SNA use direct methods in almost all its estimates, in other words, methods based on the sources of information that refer specifically to the year for which the estimate is being made. Once these sources have been used, it is also necessary to incorporate a second process of direct estimation: the incorporation of the adjustments linked to the procedures of exhaustiveness.

From all the detailed information regarding the descriptions of industries in this chapter, the pre-eminence of direct methods of estimation can be deduced, specifically on those based on surveys, censuses and administrative records for the majority of activities.

Also, and since the fundamental method used by the National Accounts of Spain for the data of the base year is to draw up an input/output system (supply/use starting from SNA in 1995), this implies that the starting point for estimating GDP and its components is a level estimate, at current prices of the benchmark year, in which the different approaches to production, expenditure, income are balanced.

This approach has been stressed so that the measurement of GDP and GNI could be complete and exhaustive. Only by means of balancing for the final years at the most detailed level of industry and products in the supply and use tables (and from the appropriate sources of information) is it possible to introduce all those aspects that align the figures with those objectives of exhaustive measurement. So, for the compilation of final years direct estimation methods and balancing are used.

For those few cases in which the available sources correspond to years that are different from the reference year the calculations are made using extrapolations with indicators related to the variable that it is intended to be measured. Also in reference years which are provisional and advance, supply and use tables are not compiled and so direct information

(provisional years) and indirect indicators are used to extrapolate at the most detailed level the figures from the previous year.

For the items that are estimated based on models, e.g. commodity flow model, CFC (PIM), Dwellings stratification method and other E&M, the calculation is made regularly on the following basis:

- In the case of services of owner-occupied dwellings, due to the complexities of the calculations and the available sources, only every five years is calculated (every Benchmark Revision). Annually, according to variations collected in the HBS about the stock of rental and owner-occupied dwellings and the rental evolution of dwellings prices measured in the CPI are taken into account to construct a volume index and price index respectively.
- For remainder industries, estimates from models are calculated annually.

In addition, the assumptions underlying the models are regularly reviewed.In the case of Dwellings stratification method, the assumptions underlying the model are reviewed every five years.

In the case of BR-2024, the recommendations issued by the DMES Task Force on Fixed Assets and Estimation of Consumption of Fixed Capital have been applied. Fundamentally, the useful lives of the assets and their depreciation functions have been reviewed.

3.6 The main approaches taken with respect to exhaustiveness

With regard to the procedures relating to exhaustiveness, we attempt to capture and include in the accounting measurements that part of the economy not recorded in the statistical or administrative sources of information. The procedures contained in the recommendations of the European Union have been incorporating such aspects as: cross-check of the employment figures from the economic sources with those from the labour force survey (LFS) in order to detect potential undervaluation; estimation of the levels of output and value added corresponding to those under valuations, if any, on the basis of hypotheses concerning productivity ratios and/or primary incomes per unit of employment; studies and specific investigations into those activities or sectors in which an additional effort to obtain information appeared necessary (non-profit institutions serving households, real estate activities, etc.); application of the methods recommended by EUROSTAT for the treatment of certain activities (sub-contracting in construction); the setting-up of inter-institutional working groups to analyse sectors of particular importance in the Spanish economy (general government, financial institutions, rest of the word); incorporation into the measurements of the National Accounts of estimates on certain outputs or incomes which their nature makes more difficult to capture statistically (additional payments or tips in personal service activities, hotels and restaurants or certain transportation sectors).

Exhaustiveness adjustments (output for market producers)=

+ N1: Underground activity
+ N2 illegal economy
+ N3 output for own final consumption
+ N6 Misreporting
+ N7 tips and wages and salaries in kind

Exhaustiveness adjustments (IC for market producers)=

+ N1 Underground activity

+ N2 IC from illegal production

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

According to the activity detail at which estimates are compiled, the industries of this section are the following ones:

SUT code	Description	NACE Rev. 2
A01	Crop and animal production, hunting and related service activities	01
A02	Forestry and logging	02
A03	Fishing and aquaculture	03

Estimates of illegal activity that form part of the agricultural divisions have been included within NACE 01: that is the case for production of marijuana.

3.7.1 CROP AND ANIMAL PRODUCTION, HUNTING AND RELATED SERVICES ACTIVITIES

The estimates obtained for output at base prices and for intermediate consumption at acquisition prices for this activity involves obtaining the aggregates output and intermediate consumption from the information on the Economics Accounts for Agriculture plus additional information and adjustments according to the following scheme:

Market output =

+ Output of the agricultural industry

- Output of wine and olive oil by agricultural production conglomerates or cooperatives in other industries

+ Secondary activity output (non-farming activities of farmers)

+ Changes in inventories of finished products and work-in-progress

+ Own-account production

+ Non-observed output

- Output of the agricultural industry is obtained from the Economics Accounts for Agriculture. It includes subsidies on products.
- Output of wine and olive oil in other industries is obtained throughout information provided by the Food Information and Control Agency (AICA).
- Secondary activity information is estimated from the directory of Social Security Contribution Accounts (SS) and the Survey of Farms (EEA).
- "Changes in inventories of finished products", "Own-account production" and "Non-observed output" are obtained as Adjustments.

Market intermediate consumptions =

+ Intermediate consumption of the agricultural industry

- Intermediate consumption of wine and olive oil by agricultural production conglomerates or cooperatives in other industries.

+ Secondary activity intermediate consumption (non-farming activities of farmers)

- Changes in inventories of raw materials and other supplies

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ FISIM

+ Non-observed intermediate consumptions

- Intermediate consumption of the agricultural industry is obtained from the economics Accounts for Agriculture.
- Intermediate consumption associated to wine and olive oil in other industries is obtained throughout information provided by the Food Information and Control Agency (AICA)
- Secondary activity information is estimated from the directory of Social Security Contribution Accounts (SS) and the Survey of Farms (EEA).
- The "Cost of the insurance service" is obtained accordingly to ESA-2010 definitions.
- "Changes in inventories of raw materials and other supplies", "Repairs and maintenance expenditures that are gross capital formation", "FISIM" and non-observed are obtained as Adjustment.

3.7.1.1 Basic Data Sources

The estimates for this industry is based on the Economic Accounts for Agriculture (CEA), compiled by the Ministry of Agriculture, Fisheries and Food (MAPA).

The Economic Accounts for Agriculture is a summary statistic that has as its main aim the provision of a quantitative and coherent description of the whole of the branch of farming activity in Spain that is as up-to-date, systematic, complete and reliable as possible.

Its legal framework, on a national level, is the National Statistics Plan. The specific framework is Regulation 138/2004 of the European Parliament and the Council on the Economics Accounts for Agriculture (CEA), within the general framework of Council Regulation No 2223/96 of 25 June 1996 on the European System of National and Regional Accounts (ESA 95). The concepts, definitions and estimations on output of agricultural, animal and forestry products are established according to this regulation and are consistent with ESA 2010.

The target population under study consists of the whole of all the local KAUs who carry out activities included in division 01 of the NACE Rev 1. The survey covers all national territory with the exception of the Autonomous Cities of Ceuta and Melilla.

The statistical unit is the local kind-of-activity unit (Local KAU). This information is compiled in the form of provincial statistical data (level 3 of the NUTS classification). The production of the National Economic Accounts for Agriculture is done as part of an integrated system in which the Regional Accounts are done first, and these are then combined to produce the National Accounts.

In this statistical operation, both in the compilation of the information and in the subsequent data processing, there are established quality controls, including in particular the submission of the information to the Autonomous Communities and the comparison of results for each and every one of the items calculated as part of the operation

The *Commission Delegated Regulation (EU) 2019/280, paragraph 1.63,* establishes that the list of characteristic agricultural activities of the CEA corresponds to the groups of NACE activities 01.1 to 01, 7, but with the following differences:

– Inclusion of the production of wine and olive.

– Exclusion of certain activities which, in NACE Rev. 2, are considered as agricultural services.

As set out in the *Manual on the EAA/EAF 97 (Rev. 1. 1),* the following relationship exists between the production and intermediate consumption variables in terms of National Accounting and in terms of Agricultural Economic Accounts:

National Accounts PRODUCTION = Agricultural Economic Accounts PRODUCTION

+ Agricultural services different from the work contracted (1)

+ Agricultural production of units below the minimum CEA threshold (production solely for own consumption from private plots and private animal rearing units) (2)

+ Production from seed production units (for research or certification) (3)

– Production of grape juice and olive oil by agricultural production conglomerates or cooperatives (4)

– Farm production registered as a secondary activity inseparable from another branch of activity in the National Accounts (5)

National Accounts INTERMEDIATE CONSUMPTION (IC) = CEA INTERMEDIATE CONSUMPTION

+ IC of farm services not forming part of the farm production stage (7)

+ Intermediate consumption of units below the minimum CEA threshold (8)

+ Intermediate consumption of seed production units (9)

– Intermediate consumption of agricultural conglomerates or cooperatives producing grape juice, wine and olive oil (10)

– Intermediate consumption for farm production registered as a secondary activity inseparable from another branch of activity in the National Accounts (11)

In addition, the output (6) and intermediate consumption (12) of non-farming activities of farmers is included.

It should be note that output from Agricultural Economic Accounts includes subsidies on products.

Only those numbered (2), (8), (4) and (10) are considered relevant to these adjustments.

In the cases of (2) and (8) an estimate of own-consumption not included in the CEA is made that affects the production adjustments. This estimate has been calculated using data from the Household Budget Survey referred to COICOP codes comparable with this NACE code for households not included in the Economic Agriculture Accounts.

Adjustments for items (4), (5) are because in the CEA, agricultural production of wine and oil by agricultural cooperatives is classified as part of the value of agricultural production. Given that in the national accounts this production is classified as a manufacturing activity, they are transferred from this industry of farming to the manufacturing group (under the manufacture of food products industry).

The manual of agricultural accounts sets out in paragraph: 1.36.3 "Since wine, olive oil and grape must (the latter in so far as it is not vinified during the reference period) result from agricultural production in the form of the processing of grapes and olives grown by the same unit, neither grapes intended for the manufacture of grape must and wine nor olives intended for the manufacture of olive oil (i.e. the basic products) should be included under output. They are treated as intra-unit consumption which is not measured as industry output."

With the aim of maintaining consistency with the results from the industrial industries covering olive oil and wine, an adjustment is made to include both the production of olives for pressing and grapes for conversion.

With regard to the adjustment for agricultural services, the change from NACE Rev. 1 to NACE Rev.2 has implied that some activities that according NACE Rev. 1 were classified in code 01 are now not classified as agricultural activities and therefore fall outside the corresponding National Accounts (e.g. activities of planning, planting and maintenance of gardens come under NACE Rev 2 coded as activity 81).

With respect the activity of non-farming activities of farmers is included (6 and 12), information from the directory of Social Security Contribution Accounts (SS) and the Farm Structure Survey is analysed.

The data of SS for companies whose main activity is Agriculture, are broken down according to the different economic activities of the Contribution Accounts for each company, considering these as secondary activities and obtaining the percentage of workers associated.

With this information, if an additional activity is detected within the main agricultural activity it is introduced as secondary activity.

Its associated output is estimated throughout the percentage of workers in this secondary activity according to Social Security, applied to the total estimated production for Agriculture with the usual base sources (6).

Finally, intermediate consumption associated with secondary activity is obtained proportionally to the associated output adjustment (12).

The Farm Structure Survey, whose breakdown by secondary activities appears much more clustered than the one obtained from Social Security, is used as an element of control and contrast (if the percentage of secondary activity according to Social Security exceeds that of the Farm Structure Survey, the latter has been used).

3.7.1.2 Adjustments

a) Validation adjustments are applied:

In intermediate consumption, in particular on repairs and maintenance expenditures (included in the intermediate consumption component “external services”) considering that part of these expenditures are gross capital formation.

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use

The Changes in inventories of finished products and goods for resale

c) And in intermediate consumption:

Adjustment for insurance (Cost of the insurance service)

Allocation of FISIM

d) Exhaustiveness adjustments:

An estimation considered as output for own final use is included under N3 (Producers not required to register). This amount has been calculated using the Household Budget Survey and includes the output of agricultural products obtained for households whose main activity is not included in NACE A.

Estimates in relation to the production of marijuana for output and intermediate consumption have been included as N2 (illegal producers).

3.7.2 FORESTRY AND LOGGING

The estimate for this activity is supported as fundamental sources in the statistics produced by the Ministry for the Ecologic Transition and the Demographical Challenge (MITECO). Specifically, the main sources used are the European Forest Accounts (EFA) and the Statistical Yearbook published by this Ministry (Forestry Statistics chapter).

The estimates obtained for output at base prices and for intermediate consumption at acquisition prices for this activity involves obtaining the aggregates output and intermediate consumption from the information on the (EFA) plus additional information and adjustments according to the following scheme:

Market output:

+ Output of the forestry and logging industry

+ Changes in inventories of finished products and work-in-progress

+ Own-account production

+ Non-observed output

- Output of the forestry and logging is obtained from the Economic Accounts for Forestry. It includes subsidies on products and excludes Changes in inventories of finished products.

- "Changes in inventories of finished products", "Own-account production" and "Non-observed output" are obtained as Adjustments.

Market intermediate consumptions: =

+ Intermediate consumption of the forestry and logging industry

- Changes in inventories of raw materials and other supplies

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ FISIM

- Intermediate consumption of the agricultural industry is obtained from the EFA.
- "The Cost of the insurance service" is obtained accordingly to ESA-2010 definitions.
- "Changes in inventories of raw materials and other supplies", "Repairs and maintenance expenditures that are gross capital formation", and "FISIM" are obtained as Adjustment.

3.7.2.1 Basic Data Sources

The EFA is a summary statistic that has as its main aim the provision of a quantitative and coherent description of the whole of the industry of forestry activity in Spain, referring to specific spatial and temporal fields, which is as up-to-date, systematic, complete and reliable as possible. Macromagnitudes used as indicators of annual national economic results of the silviculture activity are established, in line with the European Regulation concerning Economic Accounts for Agriculture in the Community (Regulation EC no. 138/2004).

The forestry activity estimates has been updated with the incorporation of Forestry Accounts as main source of data.

3.7.2.2 Adjustments

a) Validation adjustments are applied:

In intermediate consumption, in particular on repairs and maintenance expenditures (included in the intermediate consumption component "external services") considering that part of these expenditures are gross capital formation.

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use.

The Changes in inventories of finished products and goods for resale.

And in intermediate consumption:

Adjustment for insurance (ESA insurance).

Allocation of FISIM.

c) Exhaustiveness adjustments:

An estimation considered as output for own final use is included under N3 (producers not required to register). This amount has been calculated using the Household Budget Survey and includes the output of forestry and logging products obtained for households.

There are not exhaustiveness adjustments for intermediate consumption.

3.7.3 FISHING AND AQUACULTURE

This activity corresponds to code 03 of NACE Re.2 and covers the use of fishery resources from marine, brackish or freshwater environments, with the aim of catching or harvesting fish, crustaceans, molluscs and other marine organisms and products. Service activities incidental to marine or freshwater fishery or aquaculture are included in the related fishing or aquaculture activities.

The industry estimates are mainly based on the Fishing Statistics from the Ministry of Agriculture, Fisheries and Food (MAPA), specifically on the Marine Fishing Economic Survey and the Aquaculture Economic Survey.

Thus, for the calculation both of production and of intermediate consumption for this activity, the sum of the two sub activities estimates is done from the information provided (output at basic prices and intermediate consumption at purchasers prices) from the abovementioned surveys (Marine Fishing Economic Survey and Aquaculture Economic Survey) plus additional information and adjustments according to the following scheme:

Market output: =

+ Net turnover

+ Changes in inventories of finished products and work-in-progress

+ Other management income

+ Own-account production

+ Subsidies on products

+ Non-observed output

"Net turnover ", "Other management income" and "Subsidies on products" are obtained from data from the Marine Fishing Economic Survey and the Aquaculture Economic Survey"Changes in inventories of finished products", "Own-account production" and "Non-observed output" are obtained as Adjustments.

Market intermediate consumptions =

+ Purchases of raw materials and other supplies

- Changes in inventories of raw materials and other supplies

+ Work performed by other companies

+ External services (except insurance premiums)

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ FISIM

+ Non-observed intermediate consumptions

- "Purchases of raw materials and other supplies", "Work performed by other companies" and "External services (except insurance premiums)" are estimated from data from EEE.

- "The Cost of the insurance service" is obtained accordingly to ESA-2010 definitions.

- "Changes in inventories of raw materials and other supplies", "Repairs and maintenance expenditures that are gross capital formation", "FISIM" and "Non-observed intermediate consumption" are obtained as Adjustment.

3.7.3.1 Basic Data Sources

As said before, the main data sources for this industry are the Marine Fishing Economic Survey and the Aquaculture Economic Survey. The aim of the *Marine Fishing Economic Survey* is to learn the main economic characteristics of the fisheries sector, to help Public Administrations in management and decision-making for the sector from two viewpoints: one for public accounting, following the standards of the European Accounting System, and the other for private accounting, following the General Accounting Plan, applicable to Spanish companies according to their size.

The purpose of the Marine Fishing Economic Survey is to gather technical-financial information on the major groups and individual fishing vessels flying the Spanish flag that make up the extractive fishing sector, and on their totality, on an annual basis. This survey therefore aims to research primary economic data to inform on the profitability of the various types of fleets, by obtaining useful indicators to determine the macroeconomic magnitudes of the fishing industry. The analytical variables of the survey, from the point of view of national accounting are: production at base prices, intermediate consumption at acquisition prices, gross added value at base prices, consumption of fixed capital, net added value at base prices, other operating subsidies, other taxes on production, fishing income, employee remuneration, net operating surplus / mixed income.

The legal framework, on a national level, of this survey is the National Statistics Plan. Within the international framework, the survey aims to meet the requirements on marine fishing under Council Regulation 199/2008 which lays down a Community framework for compiling, managing and utilising data from the fishing sector and making scientific assessments regarding common fisheries policy, and the Commission Decisions 2008/949/CE and 2010/93/UE, adopting the multi-annual Community programmes from 2009 to 2010 to 2013 to 2016, in compliance with those Regulations.

The target population for the survey is established under the National Classification of Activities (CNAE- 2009, the Spanish version of NACE Rev.2) and consists of all the fishing vessels appearing in the Census on the Working Fishing Fleet (CENFLOP) that are authorised for sea fishing during the reference period.

This population is stratified following the Community standard derived from Council Regulation199/2008, and a survey is carried out by random layered sample, taking as the main variable the financial profitability of the statistical unit and, as a supplementary variable, its size, measured by gross registered tonnage.

Regarding the Aquaculture Economic Survey, the legal framework for this survey, on a national level, is the National Statistics Plan. Within the international framework, the survey aims to meet the requirements on Aquaculture under Council Regulation 199/2008 which lays down a Community framework for compiling, managing and utilising data from the fishing sector and making scientific assessments regarding common fisheries policy, and the Commission Decisions 2008/949/CE and 2010/93/UE, adopting the multi-annual Community programmes from 2009 to 2010 to 2013 to 2016, in compliance with the aforementioned Regulation 199/2008.

The target population for study is the group of cultivating establishments which are authorised to carry out the activity of aquaculture during the reference period, classified under group 03.2 in the National Classification of Activities (CNAE-2009, the Spanish version of NACE Rev.2). It therefore includes both marine and freshwater aquaculture.

The survey framework is built up from the Directory of aquaculture establishments (MAPA). This directory consists of the group of establishments authorised to carry out the activity of aquaculture. Updating of the directory takes place annually through the Aquaculture Establishments Survey (also the responsibility of the Fisheries Statistical Service) either from records authorising the activity, or from the actual fieldwork involved in the study.

The geographical scope of the research is all Spanish territory, both marine and land areas.

A stratified sample according to the following categories of establishments is done for this population framework: type of aquaculture in terms of water source, type of establishment and cultivation facilities, and principal species cultivated. For those layers with a low number of establishments (less than 20), for each major species cultivated, in-depth research is done. Those layers with a high number of establishments, 20 or more, and, often, similar characteristics, are researched by a sample of the establishments in the stratum, from which results for the population are subsequently grossed up.

3.7.3.2 Adjustments

a) Validation adjustments are applied:

In intermediate consumption, in particular on repairs and maintenance expenditures (included in the intermediate consumption component “external services”) considering that part of these expenditures are gross capital formation.

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use

The Changes in inventories of finished products and goods for resale

c) And in intermediate consumption:

Adjustment for insurance (ESA insurance)

Changes in inventories of raw materials and other supplies

Allocation of FISIM

d) Exhaustiveness adjustments:

An estimation considered as output for own final use is included under N3 (Producers not required to register). This amount has been calculated using the Household Budget Survey and includes the output of fishing products obtained for households.

There is also an adjustment to estimate underground producer, included under N1 (underground production) in output and also in intermediate consumption.

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

According to the activity detail at which estimates are compiled, the industries of this section are the following ones:

SUT code	Description	NACE Rev. 2
B05	Mining of coal and lignite and related service activities	05
B06	Extraction of crude petroleum and natural gas	06
B07	Mining of metal ores	07
B08	Other mining and quarrying	08
B09	Mining support service activities	09

The estimates obtained for output at base prices and for intermediate consumption at acquisition prices for this activity involves obtaining the aggregates output and intermediate consumption from the information on incomes and expenses contained in the Structural Business Statistics (EEE) plus additional information and adjustments according to the following intermediary system

Market output =

+ Net turnover

- Consumption of goods for resale

+ Changes in inventories of finished products

+ Other management income

+ Own-account production

+ Subsidies on products

- "Net turnover "and "Other management income" are estimated from data from EEE.
- "Subsidies on products" are obtained from administrative records.
- "Changes in inventories of finished products", "Own-account production" and "Non-observed output" are obtained as Adjustments.
- Consumption of goods for resale = "Net purchases of goods for resale" - "Changes in inventories of goods for resale.
- "Net purchases of goods for resale" are estimated from sources, "Changes in inventories of goods for resale" are obtained as Adjustments.

Market intermediate consumptions =

+ Purchases of raw materials and other supplies

- Changes in inventories of raw materials and other supplies

+ Work performed by other companies

+ External services (except insurance premiums)

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ FISIM

+ Non-observed intermediate consumptions

- "Purchases of raw materials and other supplies", "Work performed by other companies" and "External services (except insurance premiums)" are estimated from data from EEE.
- "The Cost of the insurance service" is obtained accordingly to ESA-2010 definitions.
- "Changes in inventories of raw materials and other supplies", "Repairs and maintenance expenditures that are gross capital formation", "FISIM" and "Non-observed intermediate consumption" are obtained as Adjustments.

Regarding the industries of mining extraction (divisions R $\in$ {04.05, 06, 07 and 08}), if a company performs mining exploration itself, it may occur:

It succeeds => then it will value the expenses and record them as "Works performed for the company" (section c730 of the General Accounting Plan) and would be part of the production estimate for own final use.

It does not succeeded => therefore, the company does not consider those expenses as investment, so, that amount must be estimated to detract it from intermediate consumption and, on the other hand, for adding it to the output for own final use and for including it as gross fixed capital formation.

Therefore, there is a part of the mining exploration being performed by the industries dedicated to mining extraction that it is not included in the company accounts and should be estimated.

(1) In relation to the intermediate consumption, the expenses devoted to mining exploration are estimated (amount allocated to product CPA B.09 (Mining support service activities) to detract them from the intermediate consumption obtained, through the intermediary system in the industries dedicated to mining extraction.

(2) Regarding the output, the one due to the mining exploration carried out by the company itself, as its own final use production, must be included in National Accounts. It has been estimated as a sum of costs used in mining exploration plus a percentage of profit. The sum of costs includes both intermediate consumption due to mining exploration (1), as well as the compensation of employees for mining exploration work, the latter being obtained as a percentage of the total compensation of employees. This percentage is estimated using the compensation of employees for NACE B.09 over the total for NACE B. Finally, the consumption of fixed capital as well as a mark-up, are obtained using the relation between gross value added and the compensation of employees for NACE B.09 industry.

3.8.1 BASIC DATA SOURCES

The estimates for this industry in the SNA is based on the data provided by the Structural Business Statistics (EEE, or SBS in english).

The Structural Business Statistics is composed of three integrated statistical operations, which have a structural and an annual periodicity, prepared on a group of business dedicated to activities of their respective study sector:

- Structural Business Statistics: Industrial Sector
- Structural Business Statistics: Trade Sector
- Structural Business Statistics: Services sector

The main goal of the Structural Business Statistics (EEE) is to offer information about the main structural and economic characteristics of the companies of the sector under study, by means of a wide range of variables relating to the personnel employed, turnover and other income, purchases and consumptions, personnel expenditure, taxes, and investments. Regarding breakdowns by products the main source of information is the Annual Industrial Products Survey (EIP). The distribution by products affects to the core process of compilation and balancing and so to the aggregates.

For the calculation of production and intermediate consumption in terms of National Accounts, the EEE microdata are adjusted in order to avoid duplication of companies that were already accounted for in other industries of the sectors S.13 and S.15.

3.8.2 ADJUSTMENTS

a) Validation adjustments are applied:

In particular on repairs and maintenance expenditures, included in the intermediate consumption component "external services". Part of these expenditures is consider to be gross capital formation and not intermediate consumption.

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use

The Changes in inventories of finished products and goods for resale

The Subsidies on products

c) And in intermediate consumption:

Adjustment for insurance (ESA insurance)

Changes in inventories of raw materials and other supplies

Allocation of FISIM

d) Exhaustiveness adjustments:

There are not exhaustiveness adjustments in the output of these industries.

3.9 Manufacturing (NACE Rev. 2 Section C)

According to the activity detail at which estimates are compiled, the industries of this section are the following ones:

SUT code	Description	NACE Rev. 2
C101	Processing and preserving of meat and production of meat products	10.1
C105	Operation of dairies and cheese making	10.5
C10E1_5	Other food industries	10.2+10.3+ 10.4+10.6+ 10.7+10.8+ 10.9
C11	Manufacture of beverages	11
C12	Manufacture of tobacco products	12
C13	Manufacture of textiles	13
C14	Manufacture of wearing apparel	14
C15	Manufacture of leather and related products	15
C16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	16
C17	Manufacture of paper and paper products	17
C18	Printing and reproduction of recorded media	18
C19	Manufacture of coke and refined petroleum products	19
C20	Manufacture of chemicals and chemical products	20
C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	21
C22	Manufacture of rubber and plastic products	22
C23	Manufacture of other non-metallic mineral products	23
C24	Manufacture of basic metals	24
C25	Manufacture of fabricated metal products, except machinery and equipment	25
C26	Manufacture of computer, electronic and optical products	26
C27	Manufacture of electrical equipment	27
C28	Manufacture of machinery and equipment n.e.c.	28
C29	Manufacture of motor vehicles, trailers and semi-trailers	29
C30	Manufacture of other transport equipment	30
C31	Manufacture of furniture	31
C32	Other manufacturing	32
C33	Repair and installation of machinery and equipment	33

3.9.1 BASIC DATA SOURCES

The estimates obtained for output at base prices and for intermediate consumption at acquisition prices for this activity involves obtaining the aggregates output and intermediate consumption from the information on incomes and expenses contained in

the Structural Business Statistics (EEE) plus additional information and adjustments according to the following intermediary system

Market output =

+ Net turnover

- Consumption of goods for resale

+ Changes in inventories of finished products

+ Other management income

+ Own-account production

+ Subsidies on products

+ Non-observed output

- "Net turnover "and "Other management income" are estimated from data from the Structural Business Statistics (EEE).
- "Subsidies on products" are obtained from administrative records.
- "Changes in inventories of finished products", "Own-account production" and "Non-observed output" are obtained as Adjustments.
- Consumption of goods for resale = "Net purchases of goods for resale" - "Changes in inventories of goods for resale".
- "Net purchases of goods for resale" are estimated from sources, "Changes in inventories of goods for resale" are obtained as Adjustments.

Market intermediate consumptions =

+ Purchases of raw materials and other supplies

- Changes in inventories of raw materials and other supplies

+ Work performed by other companies

+ External services (except insurance premiums)

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ FISIM

+ Non-observed intermediate consumptions

- "Purchases of raw materials and other supplies", "Work performed by other companies" and "External services (except insurance premiums)" are estimated from data from EEE.
- "The Cost of the insurance service" is obtained accordingly to ESA-2010 definitions.
- "Changes in inventories of raw materials and other supplies", "Repairs and maintenance expenditures that are gross capital formation", "FISIM" and "Non-observed intermediate consumption" are obtained as Adjustments.

The estimate for this industry in the SNA is based on the data provided by the Structural Business Statistics (EEE). Also the annual Industrial Products Survey (EIP) is used for product breakdown.

For the calculation of production and intermediate consumption in terms of National Accounts, the EEE microdata are adjusted in order to avoid duplication of companies that were already accounted for in other industries of the sectors S.13 and S.15.

3.9.2 ADJUSTMENTS

a) Validation adjustments are applied:

In particular on repairs and maintenance expenditures, included in the intermediate consumption component "external services". Part of these expenditures is consider to be gross capital formation and not intermediate consumption.

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use

The Changes in inventories of finished products and goods for resale

The Subsidies on products

Adjustment to assure the correct valuation of the payments in kind.

c) And in intermediate consumption:

Adjustment for insurance (ESA insurance)

Changes in inventories of raw materials and other supplies

Allocation of FISIM

d) Exhaustiveness adjustments:

– Non-observed output (to estimate underground producer as N1 and misreporting as N6) and intermediate consumption (to estimate underground producer as N1) have been calculated.

– It is considered that industries bellowing to NACE codes 14 and 15 under-valuates the wages and salaries and an exhaustive adjustment is applied over them, throughout data from the Annual Labour Cost Survey.

– On output also it have been included the own-consumption estimate that is based on the "own consumption" item of the Household Budget Survey. Given that the base structural surveys used when estimating this industry do not include the General Accounting Plan accounts referred to own consumption, it is required, in order to assure balance, to add to the total output the amount estimated for the Households' final consumption.

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

According to the activity detail at which estimates are compiled, the industries of this section are the following one:

SUT code	Description	NACE Rev. 2
D35	Electricity, gas, steam and air conditioning supply	35

The estimates obtained for output at base prices and for intermediate consumption at acquisition prices for this activity involves obtaining the aggregates output and intermediate consumption from the information on incomes and expenses contained in the Structural Business Statistics (EEE), plus additional information and adjustments according to the following intermediary system

Market output =

+ Net turnover

- Consumption of goods for resale

+ Changes in inventories of finished products

+ Other management income

+ Own-account production

+ Subsidies on products

“Net turnover “and “Other management income” are estimated from data from the Structural Business Statistics (EEE).

“Subsidies on products” are obtained from administrative records.

“Changes in inventories of finished products”, “Own-account production” are obtained as Adjustments.

Consumption of goods for resale = “Net purchases of goods for resale” - “Changes in inventories of goods for resale.

“Net purchases of goods for resale” are estimated from sources, “Changes in inventories of goods for resale” are obtained as Adjustments.

Market intermediate consumption =

+ Purchases of raw materials and other supplies

- Changes in inventories of raw materials and other supplies

+ Work performed by other companies

+ External services (except insurance premiums)

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ FISIM

+ Non-observed intermediate consumptions

“Purchases of raw materials and other supplies”, “Work performed by other companies” and “External services (except insurance premiums)” are estimated from data from EEE.

“The Cost of the insurance service” is obtained accordingly to ESA-2010 definitions.

“Changes in inventories of raw materials and other supplies”, “Repairs and maintenance expenditures that are gross capital formation”, “FISIM” and “Non-observed intermediate consumption” are obtained as Adjustments.

3.10.1 BASIC DATA SOURCES

The estimate for this industry in the SNA is based on the data provided by the Structural Business Statistics (EEE).

For the calculation of production and intermediate consumption in terms of National Accounts, the EEE microdata are adjusted in order to avoid duplication of companies that were already accounted for in other industries of the sectors S.13 and S.15.

In this section an adjustment is applied for natural gas producing companies consisting in considering the goods for resale of gas natural as raw material. The applies only to companies belonging to NACE 3523, transferring only the goods for resale necessary to reach the imported natural gas according to imports records.

3.10.2 ADJUSTMENTS

a) Validation adjustments are applied:

In particular on repairs and maintenance expenditures, included in the intermediate consumption component “external services”. Part of these expenditures is consider to be gross capital formation and not intermediate consumption.

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use

The Changes in inventories of finished products and goods for resale

The Subsidies on products

Adjustment to assure the correct valuation of the payments in kind

c) And in intermediate consumption:

Adjustment for insurance (ESA insurance)

Changes in inventories of raw materials and other supplies

Allocation of FISIM

d) Exhaustiveness adjustments:

There are not exhaustiveness adjustments for the output of these industries.

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

According to the activity detail at which estimates are compiled, the industries of this section are the following ones:

SUT code	Description	NACE Rev. 2
E36	Water collection, treatment and supply	36
E37	Sewerage	37
E38	Waste collection, treatment and disposal activities; materials recovery	38
E39	Remediation activities and other waste management services	39

This activity includes market and non-market producers:

3.11.1 MARKET PRODUCERS

The estimates obtained for output at base prices and for intermediate consumption at acquisition prices for this activity involves obtaining the aggregates output and intermediate consumption from the information on incomes and expenses contained in the Structural Business Statistics (EEE). Plus additional information and adjustments according to the following intermediary system

Market output =

+ Net turnover

- Consumption of goods for resale

+ Changes in inventories of finished products

+ Other management income

+ Own-account production

+ Subsidies on products

“Net turnover “and “Other management income” are estimated from data from the Structural Business Statistics (EEE).

“Subsidies on products” are obtained from administrative records.

“Changes in inventories of finished products”, “Own-account production” and “Non-observed output” are obtained as Adjustments.

Consumption of goods for resale = “Net purchases of goods for resale” - “Changes in inventories of goods for resale.

“Net purchases of goods for resale” are estimated from sources, “Changes in inventories of goods for resale” are obtained as Adjustments.

Market intermediate consumptions =

+ Purchases of raw materials and other supplies

- Changes in inventories of raw materials and other supplies

+ Work performed by other companies

+ External services (except insurance premiums)

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ FISIM

+ Non-observed intermediate consumptions

"Purchases of raw materials and other supplies", "Work performed by other companies" and "External services (except insurance premiums)" are estimated from data from EEE.

"The Cost of the insurance service" is obtained accordingly to ESA-2010 definitions.

"Changes in inventories of raw materials and other supplies", "Repairs and maintenance expenditures that are gross capital formation", "FISIM" and "Non-observed intermediate consumption" are obtained as Adjustments.

3.11.1.1 Basic Data Sources

The estimate for this industry in the SNA is based on the data provided by the Structural Business Statistics (EEE).

For the calculation of production and intermediate consumption in terms of National Accounts, the EEE microdata are adjusted in order to avoid duplication of companies that were already accounted for in other industries of the sectors S.13 and S.15.

3.11.1.2 Adjustments:

a) Validation adjustments are applied:

In intermediate consumption, in particular on repairs and maintenance expenditures (included in the intermediate consumption component "external services") considering that part of these expenditures are gross capital formation.

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use

The Changes in inventories of finished products and goods for resale

The Subsidies on products

Adjustment to assure the correct valuation of the payments in kind

And in intermediate consumption:

Adjustment for insurance (ESA insurance)

Changes in inventories of raw materials and other supplies

Allocation of FISIM

c) Exhaustiveness adjustments:

– There are not exhaustiveness adjustments for the output of these industries.

–

3.11.2 NON-MARKET

3.11.2.1 Output

The estimated output of the General Government Sector in this industry is carried out by adding all the expenses that are production costs from the following COFOG groups:

- 5.1 Waste management
- 5.2 Wastewater Management
- 5.3 Pollution reduction
- 6.3 Supply of water

In addition, there is specific addition of the costs of the Hydrographic Confederation of the Guadalquivir, Hydrographic Confederation of the Júcar, Hydrographic Confederation of the Segura, Hydrographic Confederation of the Cantabrian Sea, Hydrographic Confederation of the Miño Sil (since 2012) and Hydrographic Confederation of Guadiana (since 2016), whose expenses are classified in group 4.7 of the COFOG.

Market output is compiled through the P.11 data of the General Government Sector by COFOG that are provided by the Audit Office as part of the compilation of the General Government Accounts. In particular, the list of fees, public prices and other revenue collected by subsectors S.1311 and S.1313 are allocated to taxes and market output according to the criteria established in ESA 2010 (paragraphs 3.27-3.41 and 20.05-20.55).

The *output* of this industry is taken in full to the main products of the branch, *Natural water; water treatment and distribution services* (CPA 36) and *Sewage, waste management and sanitation services* (CPA 37 + 38 + 39) except for output for own final use of software and of research and development.

3.11.2.2 Intermediate consumption

The estimate of *intermediate consumption* of this branch of activity is performed by aggregating the *intermediate consumption* from the groups of the COFOG and business units mentioned in the previous point.

The estimate of intermediate consumption in insurance and pension plans is performed similarly to that described in section O for the industry. The distribution of the remaining aggregate of *intermediate consumption* by products is carried out by applying the percentage structure of *intermediate consumption* by product of the market units in the same branch of activity.

3.12 Construction (NACE Rev. 2 Section F)

According to the activity detail at which estimates are compiled, the industries of this section are the following ones:

SUT code	Description	NACE Rev. 2

F411	Development of building projects	411
F412	Construction of residential and non-residential buildings	412
F42	Civil engineering	42
F43	Specialised construction activities	43

3.12.1 BASIC DATA SOURCES

The estimates obtained for output at base prices and for intermediate consumption at acquisition prices for this activity involves obtaining the aggregates output and intermediate consumption from the information on incomes and expenses contained in the Construction Industry Structure Survey (EEC) plus additional information and adjustments according to the following intermediary system

Market output =

+ Net turnover

- Consumption of goods for resale

+ Changes in inventories of finished products

+ Other management income

+ Own-account production

+ Subsidies on products

+ Non-observed output

“Net turnover “and “Other management income” are estimated from data from the Construction Industry Structure Survey (EEC).

“Subsidies on products” are obtained from administrative records.

“Changes in inventories of finished products”, “Own-account production” and “Non-observed output” are obtained as Adjustments.

Consumption of goods for resale = “Net purchases of goods for resale” - “Changes in inventories of goods for resale”.

“Net purchases of goods for resale” are estimated from sources, “Changes in inventories of goods for resale” are obtained as Adjustments.

Market intermediate consumptions =

+ Purchases of raw materials and other supplies

- Changes in inventories of raw materials and other supplies

+ Work performed by other companies

+ External services (except insurance premiums)

+ Cost of the insurance service

+ FISIM

+ Non-observed intermediate consumptions

“Purchases of raw materials and other supplies”, “Work performed by other companies” and “External services (except insurance premiums)” are estimated from data from EEC.

“The Cost of the insurance service” is obtained accordingly to ESA-2010 definitions.

“Changes in inventories of raw materials and other supplies”, “FISIM” and “Non-observed intermediate consumption” are obtained as Adjustments.

The main source of information used in the estimates for this industry is the Construction Industry Structure Survey (EEC).

This survey is carried out since 1980 by the Ministry of Transport and Sustainable Mobility General Subdirectorate of Statistics and Studies, its aims include:

Obtaining a detailed, up-to-date, trustworthy and complete compilation of information on the construction industry.

Obtaining temporary homogeneous series of results, with definitions and criteria that allow comparison with information produced by other countries.

Serving as an instrument for the execution of studies and analyses relating to production factors used and other elements that allow the activity, performance and competitiveness of companies to be measured, as well as their structure and evolution, with the object of comparing their activity and performance with that of their market competitors.

Its geographical scope covers all firms located in Spanish territory whose main activity (i.e. the one that provides the greatest gross added value to their basic costs) is construction. It is annual and the reference period is the financial year of the companies.

The framework used to obtain the sample is the DIRCE produced by the INE and the choice of sample units is handled by strata according to the size of the company and by activity according to CNAE2009 (NACE Rev.2), for each Autonomous Community. From 2001, the selection of sample units is exhaustive for companies with 50 or more employees and stratified randomly for those with less than 50 employees.

For the calculation of production and intermediate consumption in terms of National Accounts, the EEC microdata are adjusted in order to avoid duplication of companies that were already accounted for in other industries of the sectors S.13 and S.15.

A series of specific adjustments must be made to the total production and intermediate consumption as resulted from the EEC to allow us to adapt to the criteria dictated by the current manual represented by the European Accounting System SEC2010. These adjustments are the following:

- In the case of real estate promotion companies (developers of building projects), they buy land and subcontract construction companies to build on this land. The adjustment consists in considering that these works carried out by other companies are goods for resale.

  This adjustment is due to the fact that developer production should be logged as the difference between income from sales and construction costs of what has been sold (always sub-contracted in this type of company).

  However, the usual practice for developers of building projects (belonging to NACE 4110) is to register the cost of construction under the heading "Work performed by other companies" in their business accounts. Therefore, the cost of construction for developers

of building projects is discounted from the variable "Work performed out by other companies" and included as “Good for resale”.

As the company's construction costs come under the EEC heading "work done by other companies", the adjustment involves the removal from the output and intermediate consumption of the value estimated for this variable in the case that correspond to real estate promotion. So that, this adjustment affects to output and intermediate consumption by the same amount, leaving the GVA unchanged.

• Construction services carried out for a period less than one year are not recorded as exports of services in the rest of the world accounts, as established at ESA 2010 (paragraph 2.09 b). The estimate of its value (Turnover abroad for a period < 1 year) comes from exports of "construction services abroad" provided by the International Trade in Services Survey (ECIS) for the reference year.

The EEC questionnaire includes a section with the distribution of sales, average employment, labour cost and number of premises in Spanish territory, rest of the European Union and rest of the world (that is *Turnover abroad*).

From the supply-side approach, these amounts are considered in the estimation of the total turnover of the construction industry. The variables from the EEC are adjusted in order to eliminate the exports of construction services lasting more than one year as follows:

X = (1 – Percentage of Turnover abroad + Percentage of Turnover abroad for a period < 1 year)*X.

3.12.2 ADJUSTMENTS

a) No validation adjustments are applied

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use

The Changes in inventories of finished products and goods for resale

The Subsidies on products

d) And in intermediate consumption:

Adjustment for insurance (ESA insurance)

Changes in inventories of raw materials and other supplies

Allocation of FISIM

c) Exhaustiveness adjustments:

– Non-observed output (to estimate underground producer as N1 and misreporting as N6) and intermediate consumption (to estimate underground producer as N1) have been calculated.

The data initially obtained from the EEC are subjected to a specific procedure with regard to sub-contracts from the information contained in accounts 606 and 607 of the General Chart of Accounts for Construction Companies.

The questionnaire for the Construction Industry Structure Survey (EEC) includes the variables:

Incomes => Services rendered (includes the subcontracts taken)

Expenses => Work done by other companies.

When incomes from subcontracting activities are lower than expenditure on subcontracting then adjustment= *Expenditures – Incomes* is applied in order to estimate the revenue from subcontractors out of the register. This adjustment is included in N6.

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

According to the activity detail at which estimates are compiled, the industries of this section are the following ones:

SUT code	Description	NACE Rev. 2
G45	Wholesale and retail trade and repair of motor vehicles and motorcycles	45
G46	Wholesale trade, except of motor vehicles and motorcycles	46
G47	Retail trade, except of motor vehicles and motorcycles	47

Estimates of illegal activity that form part of the trade divisions have been included within those divisions: drug trafficking and tobacco smuggling.

3.13.1 LEGAL ACTIVITY

The output estimate relating to Trade has been made using two alternative, but at the same time complementary, methods:

– The **first method** involves obtaining the aggregates output from the information on incomes and expenses contained in the Structural Business Statistics (EEE).

– The **second method** involves obtaining the matrices of margins per product for each industry.

The **first method** establishes the following intermediary system:

Market output: =

+ Net turnover

- Consumption of goods for resale

+ Changes in inventories of finished products

+ Other management income

+ Own-account production

+ Non-observed output

- "Net turnover "and "Other management income" are estimated from data from the Structural Business Statistics (EEE).
- "Changes in inventories of finished products", "Own-account production and non-observed outputare obtained as Adjustments.
- Consumption of goods for resale = "Net purchases of goods for resale" - "Changes in inventories of goods for resale.
- "Net purchases of goods for resale" are estimated from sources, "Changes in inventories of goods for resale" are obtained as Adjustments.

In order to avoid double counting when other industries have trade as a secondary activity, the variable "Consumption of goods for resale" is subtracted from the market output formula for each industry.

The **second method** involves obtaining the matrices of margins per product for each business type. By studying the distribution channels by product and the margin rates for each of the channels the corresponding commercial margin matrices can be extrapolated.

These are the steps followed to estimate the trade margins matrix:

1 - Estimating the margin percentages.

Using the specific SBS modules for the trade industries, a margin percentage for each product and each type of trade (wholesale, retail and vehicles) was calculated, under the assumption that the trade margin percentage is more or less the same for all the use cases of any product.

2 - Estimating the distribution channels share for each cell of the Use table.

Afterwards, using various hypothesis, derived from general knowledge and from the observation of the SBS surveys, it was estimated a percentage of the use from each cell of the use table bought from each distribution channel (Wholesale, retail and motor vehicles).

3 - Estimating the trade matrices.

With these two figures, and with the use table at purchase prices, less taxes, less transport margins, the three trade margin matrices where calculated (wholesale, retail, motor vehicles).

4 - Obtaining the final trade margin matrices.

After comparing the margins estimated with this method (method 2) with the margins production estimated with the supply method (method 1), the differences were very large. Since the base data used to estimate the trade matrices where less detailed and of less quality than the data used to estimate the trade margins with the supply method, it was decided to use the estimation from the supply method as preferred option. However, the trade margin matrices estimated by this method were used as a base for distributing the total trade margins production estimated from the supply side. The observed production and the non-observed production where distributed separately, to avoid the assignment of non-observed trade margins production to products that do not have non-observed sales (for example, tobacco, medications, etc.). The trade margin column for the supply table was calculated using these final trade margins matrices. This column was also taken into account during the balancing of the Supply and Use tables.

The subsequent years' trade margins matrices were calculated maintaining the margin rate by use and by product identical to the one used in the previous year. Using this ratios, the trade margins calculated with both methods were much more similar.

The final estimate for production is obtained by contrasting the two alternative methods, supply and margins on demand, as independent estimates from the demand and the supply side produced and confronted with each other for validation purposes. The first method (SBS source, Supply) is the most reliable and is preferred for the final output estimations. The second method (derived from the trade margins matrix, Demand), however, it serves more as contrast and evaluation, being used, for example, to determine the share of trade margins allocated to each product. But the final estimation of the output is always obtained giving preference to the results of the first method, as the initial estimation derived from second method is quite inaccurate due to poor source data.

However, the utility of this second method has been developed in subsequent years as the hypothesis for the trade margins rates and the distribution channels rates were improved in an iteratively way, while the matrix calculations were also closer to the Supply side calculations by aligning both methods.

This recommendation, however, only applies to the components "repair services of motor vehicles and motorcycles" and "Wholesale trade services on a fee or contract basis". An estimation for the use of these products is calculated and reconciled with the estimated supply during the SUT balancing process.

It is not possible to produce estimates for trade margins from the supply side, since they are implicit in the estimations (the value for trade margins products in the supply table is zero by definition of the supply table).

In addition, as per the recommendation in CPNB205, we compare the total turnover of activity G47 (Retail Trade) and the final household consumption expenditure for the products that are acquired via the retail distribution channel. However, they are not fully comparable because of several issues, for example:

1. We do not have enough information estimate accurately the turnover for retail trade generated in other activities.

2. Some of the sales from the retail trade industry are consumed as intermediate consumption (for example, construction materials purchased from large DIY superstores by small companies).

3. The HCFE includes goods produced by households for its own consumption.

4. The HCFE also includes goods purchased directly from the producers and from wholesale traders.

5. Some aggregations from the CPA (Classification of Products by Activity) mix services and physical goods.

Related to trade activities inside non-commercial organisations, the output estimated from the SBS for all industries includes the variable turnover, which takes into account the sales of goods for resale less the consumption of goods for resale. Therefore, the output due to trade activities is included in the estimated output.

To separate the output due to trade services we have two methods, depending on the industry:

• For activity NACE A, the % of output due to trade activities is calculated with data from the Social Security (% of employees in activity A whose SS contributions are associated to trade activities).

• For the activities B to E, there is a variable in the SBS (V70102) that accounts for the resales of goods, so Sales of goods for resale – consumption of goods for resale = output of trade activities.

• For activity F, there is a variable in the Structural Construction Survey that accounts for the resales of goods, so again Sales of goods for resale – consumption of goods for resale = output of trade activities.

• For the service industries, we calculate an average of the margin percentages for all goods for resale traded in each activity. Then we apply these percentages to the consumption of goods for resale, and the result is the output assigned to trade services.

Finally, related to repairs of motor vehicles and household goods, these are a separate product in our CPA breakdown since BR 2019, so they are estimated and balanced as any other product in the Supply-Use Table (validated against expenditure).

The main statistical source used to estimate intermediate consumption is the Annual Survey of Trade. This survey publishes information on the cost structure of the various business activity branches for the section in question.

Regarding the intermediate consumptions estimate it is based on the expenses contained in the Structural Business Statistics (EEE) plus additional information and adjustments according to the following intermediary system

Market intermediate consumptions =

+ Purchases of raw materials and other supplies

- Changes in inventories of raw materials and other supplies

+ Work performed by other companies

+ External services (except insurance premiums)

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ FISIM

+ Non-observed intermediate consumptions

• "Purchases of raw materials and other supplies", "Work performed by other companies" and "External services (except insurance premiums)" are estimated from data from EEE.

• "The Cost of the insurance service" is obtained accordingly to ESA-2010 definitions.

• "Changes in inventories of raw materials and other supplies", "Repairs and maintenance expenditures that are gross capital formation", "FISIM" and "Non-observed intermediate consumption" are obtained as Adjustments.

3.13.1.1 Basic Data Sources

The main source of information used in the estimation of this group industry is the Structural Business Statistics (EEE).

For the calculation of output and intermediate consumption in terms of National Accounts, the microdata are adjusted in order to avoid duplication of companies that were already accounted for in other industries of the sectors S.13 and S.15.

Within the EEE survey there is a series of annual modules that are fundamental to a deeper analysis of the industries covered. In this activity the EEE module constitutes the Annual Survey of Trade for trade activities (is the Statistic on Products in the Services Sector for trade) and provide information to evaluate the output of trade services by the second method previously mentioned.

3.13.1.2 Adjustments

a) Validation adjustments are applied:

In particular on repairs and maintenance expenditures, included in the intermediate consumption component "external services". Part of these expenditures is consider to be gross capital formation and not intermediate consumption.

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use

The Changes in inventories of finished products and goods for resale

e) And in intermediate consumption:

Adjustment for insurance (ESA insurance)

Changes in inventories of raw materials and other supplies

Allocation of FISIM

c) Exhaustiveness adjustments:

– Non-observed output (to estimate underground producer as N1 and misreporting as N6) and intermediate consumption (to estimate underground producer as N1) have been calculated.

3.13.2 ILEGAL ACTIVITY

With respect the sources used for the measurement of **illegal activities** in connection trade industries, we can identify two groups:

- ***Sources of information for the estimation of drug trafficking.***

The main statistical sources of information have been the Household Survey on Drug Abuse in Spain (EDADES), State Survey on the Use of Drugs in Secondary Education (ESTUDES), annual reports of the Spanish Observatory on Drugs and Drug Addiction of the Ministry of Health, annual reports of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) that presents data regarding many aspects of the drug problem in European Countries in standard tables (data of prevalence rates, number of consumers, prices, seizures of drugs, etc.), worldwide annual reports on drugs of the United Nations

Office on Drug and Crime (UNODC) and the annual reports of the United Nations International Narcotics Control Board. It is important to highlight the use in Spain of the System of Analysis, Assessment and Data Use on Drugs (SENDA), which depends on the Intelligence Centre against Organized Crime (CICO) of the Ministry of Interior, which compiles the statistical data on drugs collected by all of the State Security Forces and Corps. Additionally, university studies that deal with this issue have been consulted.

- ***Sources of information for the estimation of tobacco smuggling.***

The information sources have been the Tobacco Market Commission (Ministry of Finance), EDADES and ESTUDES surveys mentioned above, the INE Household Budget Survey, the INE Annual Trade Survey and reports of the State Security Forces and Corps and the State Tax Agency. Estimates of the percentage of the illicit cigarette consumption on the total consumption in Spain have also been taken into account.

Regarding **illegal activities**, we have to consider drug trafficking and Tobacco smuggling.

It is considered that trafficking in the following types of drugs exists in Spain: hashish resin, marijuana, cocaine, heroin, ecstasy/MDMA, speed/amphetamines /methamphetamines and LSD. Therefore, the estimate is limited to this group of drugs.

The identities of Spanish national accounts allow estimating the value of drug trafficking in Spain from two perspectives.

– **On one side, the focus of demand** based on drug consumption in Spain. For each type of drug there are different kinds of consumers (occasional or recreational drug use and regular or addictive drug use) and different hypotheses are established regarding the level of drug use per capita for each one of these consumers. In order to establish the number of consumers (regular and occasional) of each substance, the consumption prevalence rate indicators are used. When they are not representative (as in the case of heroin), individual estimates of the number of consumers are used. The total estimated volume of consumed drugs is obtained by multiplying the latter by consumption per capita.

– **On the supply side**, which attempts to estimate imports and output of these types of products. Hypotheses are made based on the percentage of imports/production seized by the State Security Forces and Corps. Different seizure rates are considered depending on the type of drug. As an industrial branch, drug trafficking in Spain comprises only the industries of wholesale trade and trade intermediaries and retail trade. Cutting or adulterating drugs does not constitute a sufficiently elaborate transformation as to classify this activity as manufacturing, and therefore, it has not been borne in mind. Transport costs are classified as intermediate consumption.

Regarding tobacco smuggling estimates, in Spain cigarettes account for most of the illicit trade of tobacco, as confirmed by the seizures made by national authorities, but other tobacco products, such as cigars, pipe tobacco and fine-cut rolling tobacco are also traded illegally. With regard to illegal production in Spain, this is barely relevant, though we should mention the closure of the odd illegal factory.

As a manufacturing industry, tobacco smuggling in Spain comprises the industry of retail trade. Transport and storage expenses are considered to be intermediate consumption.

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

According to the activity detail at which estimates are compiled, the industries of this section are the following ones:

SUT code	Description	NACE Rev. 2
H49	Land transport and transport via pipelines	49
H50	Water transport	50
H51	Air transport	51
H52	Warehousing and support activities for transportation	52
H53	Postal and courier activities	53

The estimates obtained for output at base prices and for intermediate consumption at acquisition prices for this activity involves obtaining the aggregates output and intermediate consumption from the information on incomes and expenses contained in the Structural Business Statistics (EEE) plus additional information and adjustments according to the following intermediary system

Market output =

+ Net turnover

- Consumption of goods for resale

+ Changes in inventories of finished products

+ Other management income

+ Own-account production

+ Subsidies on products

+ Non-observed output

“Net turnover “and “Other management income” are estimated from data from the Structural Business Statistics (EEE).

“Subsidies on products” are obtained from administrative records.

“Changes in inventories of finished products”, “Own-account production” and “Non-observed output” are obtained as Adjustments.

Consumption of goods for resale = “Net purchases of goods for resale” - “Changes in inventories of goods for resale.

“Net purchases of goods for resale” are estimated from sources, “Changes in inventories of goods for resale” are obtained as Adjustments.

It is also worth noting that order to estimate the industries of the different means of transport two products are differentiated: passenger transport and freight transport. This differentiation is very useful later for obtaining average transport margins and estimate matrices of transport margins.

In this industry and as a result of the compilation of SUT the value of the output of the services of freight transport is the result of a balancing operation between the structural

estimate on supply from the sources of statistical information, and the estimate on the basis of the matrices of transport margins.

Market intermediate consumptions =

+ Purchases of raw materials and other supplies

- Changes in inventories of raw materials and other supplies

+ Work performed by other companies

+ External services (except insurance premiums)

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ FISIM

+ Non-observed intermediate consumptions

- "Purchases of raw materials and other supplies", "Work performed by other companies" and "External services (except insurance premiums)" are estimated from data from EEE.
- "The Cost of the insurance service" is obtained accordingly to ESA-2010 definitions.
- "Changes in inventories of raw materials and other supplies", "Repairs and maintenance expenditures that are gross capital formation", "FISIM" and "Non-observed intermediate consumption" are obtained as Adjustments.

3.14.1 BASIC DATA SOURCES

The estimate for this industry in the SNA is based on the data provided by the Structural Business Statistics (EEE). For the calculation of production and intermediate consumption in terms of National Accounts, the EEE microdata are adjusted in order to avoid duplication of companies that were already accounted for in other industries of the sectors S.13 and S.15.

Within the EEE survey there is a series of annual modules that are fundamental to a deeper analysis of the industries covered. In this activity the EEE module constitutes the Statistic on Products in the Services Sector for Transport. This module provides information in relation to the breakdown by products. The distribution by products affects to the core process of compilation and balancing and so to the aggregates.

3.14.2 ADJUSTMENTS

a) Validation adjustments are applied:

In particular on repairs and maintenance expenditures, included in the intermediate consumption component "external services". Part of these expenditures is consider to be gross capital formation and not intermediate consumption.

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use.

The Changes in inventories of finished products and goods for resale.

The Subsidies on products.

Adjustment to assure the correct valuation of the payments in kind.

And in intermediate consumption:

Adjustment for insurance (ESA insurance).

Changes in inventories of raw materials and other supplies.

Allocation of FISIM

c) Exhaustiveness adjustments:

– Non-observed output (to estimate underground producer as N1 and misreporting as N6) and intermediate consumption (to estimate underground producer as N1) have been calculated.

– For passenger transport an estimate is made of the tips corresponding to transport by taxi, since this is the only means of transport in which this feature is to be found. The value of output in terms of tips is obtained by applying the average tip margin to the value of output for transport by taxi.

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

According to the activity detail at which estimates are compiled, the industries of this section are the following ones:

SUT code	Description	NACE Rev. 2
I551	Hotels and similar accommodation	55.1
I552T9	Holiday and other short-stay accommodation; camping grounds, recreational vehicle parks and trailer parks; other	55.2+55.3 +55.9
I56	Food and beverage service activities	56

The value of production and intermediate consumption for this industry are done by considering the two main activities that it encompasses i.e. accommodation services (I551+I552T9), and food and beverage services activities (I56), since they are actually distinct activities despite being grouped together under the A*64 classification.

The estimates obtained for output at base prices and for intermediate consumption at acquisition prices for this activity involves obtaining the aggregates output and intermediate consumption from the information on incomes and expenses contained in the Structural Business Statistics (EEE). Plus additional information and adjustments according to the following intermediary system

Market output =

+ Net turnover

- Consumption of goods for resale

+ Changes in inventories of finished products

+ Other management income

+ Own-account production

+ Subsidies on products

+ Non-observed output

“Net turnover “and “Other management income” are estimated from data from the Structural Business Statistics (EEE).

“Subsidies on products” are obtained from administrative records.

“Changes in inventories of finished products”, “Own-account production” and “Non-observed output” are obtained as Adjustments.

Consumption of goods for resale = “Net purchases of goods for resale” - “Changes in inventories of goods for resale.

“Net purchases of goods for resale” are estimated from sources, “Changes in inventories of goods for resale” are obtained as Adjustments.

Market intermediate consumptions =

+ Purchases of raw materials and other supplies

- Changes in inventories of raw materials and other supplies

+ Work performed by other companies

+ External services (except insurance premiums)

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ FISIM

+ Non-observed intermediate consumptions

“Purchases of raw materials and other supplies”, “Work performed by other companies” and “External services (except insurance premiums)” are estimated from data from EEE.

“The Cost of the insurance service” is obtained accordingly to ESA-2010 definitions.

“Changes in inventories of raw materials and other supplies”, “Repairs and maintenance expenditures that are gross capital formation”, “FISIM” and “Non-observed intermediate consumption” are obtained as Adjustments.

3.15.1 BASIC DATA SOURCES

The estimate for this industry in the SNA is based on the data provided by the Structural Business Statistics (EEE).

For the calculation of production and intermediate consumption in terms of National Accounts, the EEE microdata are adjusted in order to avoid duplication of companies that were already accounted for in other industries of the sectors S.13 and S.15.

Within the EEE survey there is a series of annual modules that are fundamental to a deeper analysis of the industries covered. In this activity the EEE module constitutes the Statistic on Products in the Services Sector for Hotels and similar accommodation. This module

provides information in relation to the breakdown by products. The distribution by products affects to the core process of compilation and balancing and so to the aggregates.

3.15.2 ADJUSTMENTS

a) Validation adjustments are applied:

– For Food and beverage services activities (NACE code 56) adjustments are made to correct the undervaluation detected in production and intermediate consumption. In the case of production, these upward adjustments may be attributed to the undervaluing of the GVA ratio on production level, tips, and the existence of undeclared employment. In relation to intermediate consumption, the rise attempts to address contrasts with alternative sources which gives rise to speculation on the undervaluation of total purchases of goods.

This undervaluation is mainly due to the characteristics of NACE 56 industry:

- In the Food and beverage service activities, professionals use the "Objective assessment method of Personal Income Tax" when the establishment is managed by legal persons, not by a company, and estimate the net output from their activities based in a series of ratios legally defined. In this activity, these ratios are based in the number of employees, the electric capacity contracted, the number of tables, the longitude of the bar, and the kind and quantity of machinery used. From this calculated output the corresponding taxes are calculated. Therefore, the professional does not need to carry a proper financial accounting and it is possible that they do not know the exact sales figures, intermediate consumption, changes in inventories, etc.

- The majority of enterprises in NACE 56 are small (65% are legal persons with less than 10 employees).

Adjustments in production and intermediate consumption (except for undeclared employment) have been classified as validation of the information obtained from the basic source.

– Regarding the total activity (not only NACE 56) another validation adjustment is applied on intermediate consumption, in particular on repairs and maintenance expenditures (included in the intermediate consumption component "external services") considering that part of these expenditures are gross capital formation.

a) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use

The Changes in inventories of finished products and goods for resale

The Subsidies on products

Adjustment to assure the correct valuation of the payments in kind.

And in intermediate consumption:

Adjustment for insurance (ESA insurance)

Changes in inventories of raw materials and other supplies

Allocation of FISIM

b) Exhaustiveness adjustments:

– Non-observed output (to estimate underground producer as N1 and misreporting as N6) and intermediate consumption (to estimate underground producer as N1) have been calculated.

– An estimate was made of the value of tips. Although this issue is more relevant for the activity of restaurants and bars and the like, an estimation is made for tips paid in hotels and hostels based on the information provided by the hostel and hotel occupancy surveys from INE: number of guests and average stay by residence of the guest and type of accommodation. A part of the estimate for tips in foods and beverage establishments, explained next, is also included in this industry.

– Regarding tips, in the Food and Beverage Service industry, it is customary that clients leave a tip for the waiters who perform this service.

In order to estimate the amount of these tips for the services performed in bars and restaurants and a part of the services in pubs, discotheques, banqueting and celebration venues, canteens and dining rooms, information from the Household Budget Survey (HBS, INEand the Population Census (INE) was used.

By crossing the information from the Population Census with that from the HBS, an approximate figure of the people who have consumed food and/or drink in bars and cafés by age bracket can be obtained (a variable considered important when quantifying the amount tipped).

To obtain the amount tipped, the different types of consumption, the average prices of the food and drink consumed were taken into account and some approximate amounts were obtained for the tips for each of the types of service offered, depending on the type of consumer.

The total tipped was calculated from the percentage of the average tip of the total amount spent multiplied by the average spent per person and multiplied by the number of people who left a tip by the type of services..

The results obtained on the percentage of tips are coherent with the ones sent to Eurostat regarding the Purchasing Power Parities framework. These results have been applied to the final consumption expenditure of households. An estimate for wages and salaries in kind has been also calculated based on employees in each industry and euros per employee and worked day.

– For Food and Beverage Service industry output also it have been included the own-consumption estimate that is based on the "own consumption" item of the Household Budget Survey. Given that the base structural surveys used when estimating this industry do not include the General Accounting Plan accounts referred to own consumption, it is required, in order to assure balance, to add to the total output the amount estimated for the Households' final consumption.

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

According to the activity detail at which estimates are compiled, the industries of this section are the following ones:

SUT code	Description	NACE Rev. 2
J581	Publishing of books, periodicals and other publishing activities	58.1
J582	Software publishing	58.2
J59	Motion picture, video and television programme production, sound recording and music publishing activities	59
J60	Programming and broadcasting activities	60
J61	Telecommunications	61
J62	Computer programming, consultancy and related activities	62
J63	Information service activities	63

This activity includes market and non-market producers:

3.16.1 MARKET PRODUCERS

The estimates obtained for output at base prices and for intermediate consumption at acquisition prices for this activity involves obtaining the aggregates output and intermediate consumption from the information on incomes and expenses contained in the Structural Business Statistics (EEE) plus additional information and adjustments according to the following intermediary system

Market output =

+ Net turnover

- Consumption of goods for resale

+ Changes in inventories of finished products

+ Other management income

+ Own-account production

+ Subsidies on products

+ Non-observed output

“Net turnover “and “Other management income” are estimated from data from the Structural Business Statistics (EEE).

“Subsidies on products” are obtained from administrative records.

“Changes in inventories of finished products”, “Own-account production” and “Non-observed output” are obtained as Adjustments.

Consumption of goods for resale = “Net purchases of goods for resale” - “Changes in inventories of goods for resale.

“Net purchases of goods for resale” are estimated from sources, “Changes in inventories of goods for resale” are obtained as Adjustments.

Market intermediate consumptions =

+ Purchases of raw materials and other supplies

- Changes in inventories of raw materials and other supplies

+ Work performed by other companies

+ External services (except insurance premiums)

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ FISIM

+ Non-observed intermediate consumptions

"Purchases of raw materials and other supplies", "Work performed by other companies" and "External services (except insurance premiums)" are estimated from data from EEE.

"The Cost of the insurance service" is obtained accordingly to ESA-2010 definitions.

"Changes in inventories of raw materials and other supplies", "Repairs and maintenance expenditures that are gross capital formation", "FISIM" and "Non-observed intermediate consumption" are obtained as Adjustments.

3.16.1.1 Basic Data Sources

The estimate for this industry in the SNA is based on the data provided by the Structural Business Statistics (EEE).

For the calculation of production and intermediate consumption in terms of National Accounts, the EEE microdata are adjusted in order to avoid duplication of companies that were already accounted for in other industries of the sectors S.13 and S.15.

Within the EEE survey there is a series of annual modules that are fundamental to a deeper analysis of the industries covered. The EEE module constitutes the Statistic on Products in the Services Sector for industries (according to NACE codes) 58.2, 62 and 63.1 within this activity. This module provides information in relation to the breakdown by products.

3.16.1.2 Adjustments

a) Validation adjustments are applied:

In particular on repairs and maintenance expenditures, included in the intermediate consumption component "external services". Part of these expenditures is consider to be gross capital formation and not intermediate consumption.

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use

The Estimate of Entertainment, Literary and Artistic original

The Changes in inventories of finished products and goods for resale

The Subsidies on products

Adjustment to assure the correct valuation of the payments in kind.

And in intermediate consumption:

Adjustment for insurance (ESA insurance)

Changes in inventories of raw materials and other supplies

Allocation of FISIM

c) Exhaustiveness adjustments:

– Non-observed output (to estimate misreporting as N6) has been calculated.

3.16.2 NON-MARKET

3.16.2.1 Output

The estimated *output* of this industry is carried out by adding all the expenses that are production costs from group 8.3 *Radio, television and publishing services* from the COFOG.

Market output is compiled through the P.11 data of the General Government Sector by COFOG that are provided by the Audit Office as part of the compilation of the General Government Accounts. In particular, the list of fees, public prices and other revenue collected by subsectors S.1311 and S.1313 are allocated to taxes and market output according to the criteria established in ESA 2010 (paragraphs 3.27-3.41 and 20.05-20.55).

Output for final use figures correspond to the output of *scientific research and development services,* estimated through the R&D Statistics, performed by INE.

The *output* from non-market units in this industry mainly goes to the product *Radio and television programming and broadcasting services* (CPA 60), except:

Revenues from the sale of films, series, programmes and broadcasting rights that are allocated to the product *cinematographic, video and television services; sound recording and music publishing services* (CPA 59), which are estimated from the annual reports of the National Commission of Markets and Competition (CNMC) on the revenues of the audiovisual sector.

Revenues from patent rights, trademarks and intellectual property allocated to the product *transfer of rights of products subject to industrial or intellectual property* (CPA 77.4), , approximating them to the revenues of Radio Televisión Española, and making the assumption that the weight thereof in total output remains constant.

Output for own final use of R&D and software, which are allocated respectively to scientific research and development services (CPA 72) and programming, consulting and *other computer-related services* (CPA 62).

3.16.2.2 Intermediate consumption

The estimate of *intermediate consumption* of this industry is performed by aggregating the *intermediate consumption* from the groups of the COFOG mentioned in the previous point:

The estimate of intermediate consumption in insurance and pension plans is performed similarly to that described for the O branch of activity. The distribution of the remaining aggregate of *intermediate consumption* by products is carried out by applying the percentage structure of *intermediate consumption* by product of the market units in the same branch of activity.

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

This branch of activity is composed of units of economic activity which are market producers and its main activity is the production of financial services. Therefore, these units are dedicated mainly to financial intermediation, which can be broken down in three main groups: *financial services except insurance services and pension funds* (NACE 64), *insurance and reinsurance services and pension funds except required Social Security* (NACE 65) and *auxiliary activities to financial and insurance services* (NACE 65). Their A77 codes are 51, 52 and 53 in the Supply and Use Tables of the Spanish economy, respectively.

The fact that most of the production of this kind of units is not explicitly sold in the market makes necessary a series of accounting agreements that enables its measurement:

1. The traditional way of providing **financial services** is carried out through financial intermediation. It is a process in which a financial institution accepts deposits from its customers who wish to receive in exchange interests, and lends them to units whose funds are insufficient to meet their needs. Thus, the bank serves as an intermediary, providing a mechanism for the first unit to lend to the second. The unit who lends funds accepts an interest rate lower than the one paid by the borrower to the bank. The reference interest rate is the rate in which lender and borrower would reach an agreement. The difference between the effective rate of payable interests and the receivable interests in concept on deposits and loans enables a measurement of financial intermediation services that are not explicitly charged by the financial institution. They are called *Financial Intermediation Services Indirectly Measured* (FISIM).

2. The output of the **Central Bank** is calculated by the sum of costs.

3. **Insurance** is an activity whereby institutional units or groups of institutional units cover themselves against the adverse financial consequences of uncertain events. Rights and obligations of insurance are known as contracts (insurance policies). The policy is an agreement between an insurance company and another unit (the policyholder), under which the policyholder makes a payment (premium) to the insurer and, when a specific event takes place, the company pays a compensation to the policyholder or other person assigned. Thus, the policyholder is protected against risks and the insurance company, combining risks, seeks to receive more premiums than the quantity the company has to pay in concept of compensations.

The main information (full technical accounts of life and non-life insurance, full non-technical account, balances) for compiling the insurance accounts –sector S.128- comes directly from the supervisor General Directorate of Insurance (DGS), an organization attached to the Ministry of Economy, Trade and Business. The information covers all insurance companies operating in Spain (those of national and also foreign ownership) and is collected in three categories:

Operation 1: Worldwide business of the entity.

Operation 2: Business of the entity carried out in countries of the European Economic Area other than Spain.

Operation 3: Business of the entity carried out in third countries outside European Economic Area.

In order to compile the insurance output and the rest of the operations D.441, D71 and D.72, we ask the DGS for a specific request of the information according to the rule "Operation 1 - Operation 2 - Operation 3". This way:

- All business by foreign branches operating in Spain are included in our calculation, because they are part of the information provided under operation 1.

- All business carried out outside Spain by these foreign entities and the national ones are excluded by subtracting operations 2 and 3.

We apply the formulas in paragraphs 16.51 and 16.52 of ESA 2010 to compile the output from the detailed information item by item that we have from the insurance technical accounts.

Moreover, in relation to investment income D.441, the procedure is similar. It is obtained with ratios of premium supplements over premiums earned based on the previous information (operation 1 – operation 2 – operation 3) and applied to the data on premiums received from abroad/paid abroad from the International Trade in Services Survey. As the ratio is obtained using the information on all companies operating in Spain provided by the DGS, foreign branches operating in Spain included, to our understanding this part related to insurance branches is well covered.

That is the basis of the insurance business. However, an explicit sale of a product at a market price does not take place, but the product that the policyholder is consuming is the fact of feeling financially covered in case that a contingency occurs. Therefore, in general terms, the production of insurance services is measured as the difference between premiums and payable claims.

3.17.1 OUTPUT

3.17.1.1 Output of financial intermediation, FISIM excluded

This activity branch covers the output of the central bank and the other monetary financial institutions, of monetary and non-monetary mutual funds, of other financial intermediaries and of captive financial institutions and moneylenders (ESA 2010 §2.67-2.70).

In the case of the Central Bank (Banco de España), its output is calculated as sum of costs while there are not more cases of financial services -other that the output of the Central Bank- that are valued as the sum of costs.

In regards to output allocation, the quantity 'explicit charges' is recorded as the expenditure of the units that purchase the service (*final consumption expenditure of households* or *intermediate consumption*), whereas quantity 'sum of costs' less those 'explicit charges' is part of the intermediate consumption of *institutional subsectors* s.122 and s.125.

Other monetary financial institutions include financial institutions whose activity is receiving deposits (or other similar to deposits) from institutional units or other financial intermediaries and granting loans or investing in securities by themselves (SEC 2010 §2.76). For these units, two different types of output can be distinguished: output of financial intermediation services indirectly measured (FISIM), dealt with in the following section, and other market output, which includes all the financial services provided to customers for whom explicit fees and commissions are charged, as well as incomes for other activities than financial intermediation.

Other financial intermediaries includes, securities companies, securitization funds, funds and venture capital companies, the Catalan Institute of Finance (ICF) and captive financial institutions, issuers of preference shares or holding entities.

Output estimates use the following sources:

– Annual accounts of the Banco de España.

– For deposits taking corporations, which are supervised by the Banco de España, accounts (benefit and loss accounts and balance) required with supervision aims provided by each entity.

– For monetary market funds operating in Spain, its accounts (benefit and loss accounts and balance) required for supervision purposes by the Comisión Nacional del Mercado de Valores (CNMV), organism in charge of their supervision, and provided by each entity.

– For non-monetary market investment funds, accounts (benefit and loss accounts and balance) required with supervision aims by either the Banco de España or the CNMV - depending which is the organism in charge of their supervision- and provided by each entity.

– For holdings companies, the Central Balance Sheet Data Office of the Banco de España is used.

This output is distributed by products according to the following criteria:

– Output from the Banco of España is assigned to *financial intermediation services* (CPA 64).

– The market output of deposit entities is distributed by products depending on the fee charged in that particular operation:

• Commissions for credit accounts availability are assigned to *financial intermediation services* (CPA 64).

• Commissions for contingent liabilities, including documentary credit and bank or other guarantees, are also assigned to *financial intermediation services* (CPA 64).

• Currency and foreign bank notes exchange commissions are assigned to *auxiliary services to financial intermediation* (CPA 66).

• Commissions for receipt and payment services, including bank bills, on demand accounts, debit/credit cards, checks, direct debits, payroll payments, transfers or money orders, are assigned to *financial intermediation services* (CPA 64).

• Commissions for securities services, including underwriting, placement, trading, administration or management, are assigned to *auxiliary services to financial intermediation* (CPA 66).

• Commissions for financial advice in extraordinary transactions are assigned to *financial intermediation services* (CPA 64).

• Commissions for factoring operations are assigned to *financial intermediation services* (CPA 64).

• Commissions for commercialization of non-banking financial products, such as investment funds, pension or insurance funds, are assigned to *auxiliary services to financial intermediation* (CPA 66).

• Other commissions are assigned to *financial intermediation services* (CPA 64).

- The output (cost of management) related to internal pension funds organized by credit institutions is assigned to *services of insurance and pension plan* (CPA 65).

- Finally, other operating revenues such as insurance compensations or real estate incomes are assigned mainly to *financial intermediation services* (CPA 64), and to a lesser extent to *services auxiliary to financial intermediation* (CPA 66), *real estate services* (CPA 68), *legal and accounting services; services of head offices, administrative, management and consulting services for enterprises* (CPA 70).

Finally, the output for own final use corresponding to programming services consulting and other computer-related services (CPA 62) and scientific research and development services (CPA 72) are added.

Moreover, output of monetary and nonmonetary investment funds is assigned to *financial intermediation services* (CPA 64); output from *other financial intermediaries* is allocated to *financial intermediation services* (CPA 64), and finally, output of captive financial institutions is also assigned to *financial intermediation services* (CPA 64).

3.17.1.2 Output of Financial Intermediation Services Indirectly Measured (FISIM)

As already mentioned before, financial intermediation consists of a bank accepting deposits from units wishing to receive interest on its cash and lending them to other units whose own funds are insufficient to meet their needs. The bank provides a mechanism to channel money from one unit to another, with the implicit acceptance that the unit lending funds accepts a rate of interest lower than that paid by the borrower.

If we call "reference rate" to the rate of interest in which would agree both the lender and the borrower to make a deal, then the difference between the reference rate and that actually paid to depositors and charged to borrowers the bank would be the price paid for the service of financial intermediation. Therefore, the total FISIM is the sum of the two implicit fees paid by the lender and the borrower.

FISIM are produced by all financial intermediaries. These and their clients can be residents and non-residents, and therefore, exports and imports of FISIM are also recorded.

The estimates on FISIM is carried out by the Central Bank according to the principles laid down in Regulation (EC) 1889/2002 of the European Commission of 23 October 2002 on the application of Regulation (EC) 448/98 of the Council, that supplements and amends Regulation (EC) 2223/96 as regards the allocation of financial intermediation services indirectly measured (FISIM) within the European System of National and Regional Accounts (ESA).

Thus, FISIM is calculated by institutional sector. The FISIM which is consumed by a resident institutional sector is the result of the addition of the FISIM related to the loans granted to such sector and the FISIM related to its deposits. FISIM on the loans granted to the resident institutional sector equals interest accrued on loans minus interest that would be accrued under a reference interest rate (loan stocks multiplied by an internal reference rate). FISIM on the deposits of the resident institutional sector is equal to the interest that would be accrued under a reference interest rate (deposit stocks multiplied by internal reference rate) minus interest accrued on deposits.

Internal reference rate is calculated as the ratio of interest receivable on loans between resident financial intermediaries to stock of loans between resident financial intermediaries.

Exported FISIM is calculated as the sum of FISIM on loans granted to non-resident and FISIM on the deposits of non-residents. FISIM on loans granted to non-residents equals to interest receivable minus the interest that would be accrued under a reference interest rate (loan stock multiply by external reference rate). FISIM on the deposits of non-residents equals to interest that would be accrued under a reference interest rate (deposit stocks multiplied by external reference rate) minus the interest payable.

FISIM imported by each institutional sector is calculated as the sum of FISIM imported for loans and FISIM imported for deposits. FISIM imported for loans equals interest receivable by non-resident financial intermediaries minus interests that would be accrued under a reference interest rate (loan stocks multiply by an external reference rate). FISIM imported for deposits equals to interest that would be accrued under a reference interest rate (deposit stocks multiplied by external reference rate) minus interest payable by non-resident financial intermediaries.

Moreover, the external reference rate is calculated as the ratio of interest on loans plus interest on deposits between resident and non-resident financial intermediaries, to the stock of loans plus the stock of deposits between resident and non-resident financial intermediaries.

Regarding the availability of statistical data required for the calculation of FISIM and in particular, average stocks of loans and deposits as well as the accrued interest available in the breakdown by user sector (user institutional sector) it should be pointed out that:

a) For resident producers:

   – Data on stocks of loans and deposits broken down by consumer sector is provided by deposit taking entities to the Banco de España for statistical purposes regularly.

   – Data on accrued interests receivable and payable by *Non-Financial Corporations*, *General Government*, *Households* and NPISH are available for deposits taking corporations; data related to other financial intermediaries, financial auxiliaries, insurance companies, non-monetary market investment funds and captives financial institutions, as a whole, is available, thus a proportional distribution according to the stocks of loans and deposits by consumer sectors and subsectors is made.

   – Finally, regarding the split of interest on loans to households, an estimate is made of that for households as house owners and as entrepreneurs, while that on loans to households as consumer is calculated residually. The portion of interest on loans to households as house owners is estimated by applying the interest rate on house purchase loans to the stock of relevant loans. Similarly, the interest on loans to households as entrepreneurs is estimated by applying the interest rate on other kind of loans to the stock of loans to households as entrepreneurs. In the case of the households sector, a breakdown of interest on deposits by purpose is not available, so all deposits of households are deemed to relate to their function as consumer, as agreed in ESA2010.

b) For imported FISIM:

   The stock of deposits is obtained from the international Banking Statistics published by the Bank for International Settlement (BIS) and that of loans obtained of total loans granted by non-residents to resident units from the Survey of Foreign Exchange Transactions (ETE) of the Central Bank under Circular 4/2012 of 25 April, of the Central Bank on standards for communication by Spanish residents of the economic transactions and balances of financial assets and liabilities with the rest of the world.

More particularly, the information regarding the figure for loans received by *General Government* is obtained from the previous source, supplemented with data from the Treasury and the Central Credit Register of the Central Bank. It is broken down by subsector from the balances at December 31 of the Spanish foreign debt, provided by the Foreign Financial Account Unit of the Central Bank, containing the stocks of loans by public subsector (excluding trade credits).

Interest flows are estimated by applying the interest rate to the total balance and, subsequently, it is decomposed by user institutional sectors proportionally to stocks of loans and deposits.

Finally, the stocks of non-performing loans (ESA 2010 §7.99-7.108) and the interest accruing on them are included in the calculation of FISIM. Loans from the IMF are excluded from the imports of FISIM since 2019 (in fact, no loans from the IMF is recorded in the Spanish IIP).

Loans from the ESM are excluded from the imports FISIM since 2019 (ESM was reclassified as General Government according to the MGDD 2019)[24], while loans from the European Investment Bank (and European Investment Fund) as well as loans from other international banks classified in S125 are all included in imports of FISIM estimates.

3.17.1.3 Output of auxiliary financial intermediation services

This branch of activity contains output of the agency securities, portfolio management companies, the mutual guarantee, payment institutions and foreign exchange trading, the management companies of investment funds and pension funds, the management companies, appraisal companies, management companies and venture capital as entrepreneurs households that produce ancillary services to financial intermediation (financial advisors, insurance agents in).

The output of this industry is compiled from the estimation of four separated components:

A. The output of securities agencies, portfolio management companies, mutual guarantee companies, payment institutions and authorized premises for the purchase of foreign currency, managers of investment funds, management companies, appraisal companies and venture capital companies, is provided by the Bank of Spain, which uses as information source the individual accounts of such units, compiled by the National Stock Exchange Commission with supervisory purposes.

B. The output of pension funds managers is provided by the Banco de España, using as information source the Pension Schemes and Pension Funds Report of the Directorate General for Insurance and Pensions Funds (DGSFP) of the Ministry of Economy, Trade and Business.

C. The output of Insurance Auxiliary Services for both *Financial Auxiliaries* (S.126) subsector and *Households* (S.14) sector, estimated with direct insurance commissions paid by insurance companies to the above mentioned auxiliary services and the available information on insurance intermediation in the Annual Report published by the Ministry of Economy, Trade and Business.

D. Finally, it is also included R & D and software production for own final use, for *programming services and consulting and other computer-related services* (CPA 62) and

[24] Anyway, the impact of the reclassification on FISIM estimates was below the GNI materiality threshold.

research and scientific development services (CPA 72), calculated for the total of the branch in a similar way to the other market units belonging to the rest of branches of economy.

Also, output of broker agencies is calculated as the sum of commission received. Other income not related to production of services are considered in other items of their profit and loss account.

The production of this branch is assigned mainly to services auxiliary to financial intermediation and the remaining output to book publishing service (CPA 58), real estate services (CPA 68) and legal and accounting services, headquarters, consulting and business management (CPA 70), according to the percentage distribution in former accounting series.

3.17.1.4 Output of insurance activities and pension funds

This branch of activity contains, on the one hand, insurance companies, defined as companies that provide life insurance and non-life (fire, liability, motor, accident, illness, etc.) to other institutional units and reinsurance services to other insurance companies. On the other hand, it contains the output of pension funds that provide social insurance to insured persons, such as the private pension plans that provide income during retirement or death or disability benefits.

Such pension funds must be autonomous, capable of decision taking and a have a complete set of accounts. Otherwise, they do not belong to this branch but they are part of the unit or branch that creates them.

Information on the output of these entities comes from the Directorate General for Insurance and Pensions Funds[25] (DGSFP) of the Ministry of Economy, Trade and Business, which provides the profit and loss accounts and balance sheets of the insurance sector and pension funds (technical accounts of life and non-life insurance)and the regions with competency assumed in insurance (Basque and Catalan Entities of Social Welfare) providing annual reports with the main aggregated information of their social welfare entities.

In the case of life insurance, output of insurance services is determined as the sum of the earned premiums for the year, plus premium supplements, less claims incurred and less variation in technical provisions against outstanding risks and technical provisions for insurance with profit sharing.

In the case of non-life insurance and reinsurance services output of insurance or reinsurance services is determined as the sum of the premiums earned in the year, plus premium supplements, less claims adjusted, calculated using current compensation corrected by variations in the stabilization reserve. Both reinsurance commissions and profit sharing are treated as items decreasing the output of reinsurers.

Claims-related costs (in non-life insurance) and benefits-related costs (in life insurance) are excluded in the calculation of adjusted claims incurred and benefits due. Costs related with all type of claims/benefits are considered intermediate consumption. DGS provides an account document named “Reclassification of expenses” in which we can identify those management costs related to claims and benefits and allocate them to Intermediate consumption.

[25] https://dgsfp.mineco.gob.es/es/Publicaciones/Paginas/default.aspx

Moreover, insurers' own funds are excluded from premium supplements since they are not included in the technical account of life or non-life insurance. This information is provided in the non-technical account from the DGS (Supervisor of the insurance sector in Spain), which is not involved in premium supplements calculation.

It must be taken into account that the inclusion of income and expenses in the technical account, for life or non-life insurances, is subject to the general principle set out in the rules for the financial statements of insurance companies, in accordance with the which, derivatives from operations that do not relate to the technical substrate of the insurance operation will not be considered as technical.

We must also add the output corresponding to income from tangible investments (Section II.1 Technical Account) and other extraordinary income (section V of the non-technical account), which contain income earned by insurance companies different to direct insurance premiums and accepted reinsurance, as gains on the sale of shares in consolidated companies or profits by trading in shares of the parent company and group financial liabilities.

In the case of autonomous pension funds, the output is measured as the sum of the management costs for the service they provide, in a consistent manner with the calculation of row 2.5 of the Pension Table (table 29)[26] in the case of employment related pension funds.

Holding gains/losses (realised and non-realised) are excluded from the output of insurance services as the insurance output is compiled through a business accounting correspondence from the information of technical account of life or non-life insurance to National Accounts concepts.

Realized gains/losses may appear in life and non-life technical accounts and non-technical account, depending on the nature of the investments. Specifically, they are registered in the paragraph II.4 of the Spanish technical accounts where is a heading called *"Gains on realization of property, plant and equipment and investments"* that it is not transferred to insurance output calculations. In the same way, there is a heading XI.3 called *"Losses on realization of property, plant and equipment and investments"* that it is not transferred to insurance output calculations.

In addition, unrealized holding gains/losses are shown in the Statement of Changes in Equity under the heading II.1 - *Available-for-sale financial assets: Valuation gains and losses.* This is an auxiliary or additional informative document that it is not used in calculating the production of the insurance sector.

Finally, the liabilities of the entities' balance sheet include the accumulated figure for all years under the heading B.2.I) *Adjustments for changes in value, available-for-sale financial assets.* This is another informative document that is not part of the output of the sector.

This output is assigned to *insurance and pension funds* (CPA 65), except the part related to income from tangible investments that is assigned to *real estate services* (CPA 68) and the part on extraordinary income allocated to *auxiliary financial intermediation* (CPA 66) and *legal and accounting services* (CPA 70), according to the percentage distribution used in former accounting series.

[26] Inventory of sources and methods in the Spanish Pensions Table: https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177063&menu=metodologia&idp=1254735576581

Finally, the output for own final use corresponding to products *programming services* and *consulting and other computer-related services* (CPA 62) and *scientific research and development services* (CPA 72) are added.

It is necessary to highlight that the output of insurance service and reassurance of this branch is either an intermediate consumption of the rest of branches of the economy or household final consumption expenditure. The distribution of this output between intermediate and final demand is made proportionally to the payable actual premium of each institutional sector or branch of activity. To this end, the following sources are available:

– From the supply point of view, DGSFP provides the technical incomes and expenditures of the non-life insurance in 21 branches of activity.

– The Association of Cooperative Research between Insurance Companies and Pension Funds (ICEA) provides the technical incomes and expenditures of non-life insurance with a higher level of disaggregation by branches.

– Several economic surveys (*Structural Business Survey and Construction Survey*) provide estimations of the annually paid insurance premiums by every branch of activity.

– The *Household Budget Survey* estimates the non-life insurance premiums annually paid by households.

Related to allocation of output:

- Allocation of direct non-life output to policyholders is based on types of non-life insurance (fire, liability, motor, accident, illness, etc.) and the corresponding premiums payable, in following order:

1º. We first obtain insurance exports. This data is provided from sector S.2 – Rest of the world.

2º. The rest of the production is divided between HFCE and intermediate consumption with a ratio that we calculate from the household spending on non-life insurance (source: Households Budget Survey) and the total spending on non-life insurance (source: Directorate General for Insurance and Pensions Funds, DGS).

3º. The distribution of intermediate consumption of direct non-life insurance among industries is based on SBS data on premiums payable.

- Allocation of imports of direct non-life insurance is done using the same allocation process as for output.

Thus, information provided by the DGSFP and HBS on insurance premiums allow to calculate a ratio of the total premiums paid by households on the total premiums paid in the economy. This ratio is used to allocate the corresponding portion of the insurance service to *household final consumption expenditure*.

The remaining insurance service is allocated to the intermediate demand. This amount corresponds to the difference between the total insurance service in the Supply Table (i.e. domestic production plus imports of insurance service) minus the part already allocated in the Use Table (household final consumption expenditure plus exports of insurance services).

In addition, intermediate demand is distributed among the various branches of activity by applying the percentage structure for the distribution of insurance premiums paid according to SBS survey and ICEA information for agricultural insurance.

Additionally, the part of the various classes of non-life insurance that has been allocated to final consumption expenditure of households is divided among several COICOP categories of goods and services according to HBS information on premiums.

The consistency of the cross-border flows of investment income attributable to insurance policy holders with the premium supplements in exports and imports of insurance is ensured by determining the cross-border flows of investment income attributable to insurance policy holders as the same value to the premium supplements.

3.17.2 INTERMEDIATE CONSUMPTION

Broadly speaking, the intermediate consumptions of activities included in this branch are estimated from the aforementioned sources.

3.17.2.1 Intermediate consumption of financial intermediation

In the case of financial intermediation, intermediate consumptions include brokerage and commissions paid in lending and deposit rates, as well as the majority of the operating expenses.

The operating expenses of other monetary financial institutions appear disaggregated in the sources in rents, maintenance, lighting, water and heating, stationery and office supplies, communications, IT, advertising and propaganda, legal and advocate expenses, technical reports, security and fund transfer services, insurance premiums, association fees, representation and travel expenses of staff, imputation of expenses to branches and costs of control organs and government, which allows their assignment by products.

This allocation to products is in some cases direct and fully leads to a product, such as commissions paid to be fully allocated to the product *financial intermediation services* (CPA 64), financial costs are fully allocated to *auxiliary services to financial intermediation* (CPA 66) or rents that are fully allocated to *real estate services* (CPA 68). In other cases, however, an allocation between different products has to be made. This allocation is made based on percentage distribution used in former accounting series.

Part of the sector computing costs are also considered *intermediate consumption* of this branch, which are excluded as *gross fixed capital formation*, and the production by the Central Bank not consumed by other sectors of the economy.

The expenses structure observed in the other monetary financial institutions is applied to the rest of branch units, with the exception of the Central Bank. In this case, the value of its operating costs is available and assigned by products according to the percentage distribution used in former accounting series.

3.17.2.2 Intermediate consumptions of FISIM

The output of FISIM is used by industries (financial intermediaries excluded) proportionally to the total output by industry in current prices of the reference year.

3.17.2.3 Intermediate consumptions of auxiliary financial services

The estimate of intermediate consumption of those units that make up this industry comes from the same sources as discussed in the case of production.

The distribution of these intermediate consumptions by product is carried out according to a weighted average of the intermediate consumptions of the financial intermediation and insurance branches, which are the branches they assist.

3.17.2.4 Intermediate consumptions of insurance services and pension funds

The estimate of intermediate consumption of those units that make up this industry comes from the same sources as discussed in the case of production.

Specifically, the reclassification of expenses by destination from the Directorate General of Insurance and Pension Funds (DGSFP) for insurance entities of the sector (corporations, mutual societies, social welfare institutions, etc.) provides detailed information on these (commissions by type of insurance, leases, repairs, maintenance, independent professional services, insurance premiums, office supplies, advertising, supplies, etc.) based on which the product allocation is made.

In particular, reinsurance services are recorded as intermediate consumption of the branch. For this, reinsurance output is previously calculated (reinsurance accepted) from information obtained from the DGSFP, mainly on pure reinsurers. Second, imports and exports of insurance consistent with the information received from the DGSFP in relation to premiums and benefits paid are obtained, both in ceded and accepted reinsurance, between Spain and other countries in the European Economic Area on the one hand, and third countries on the other. It is taken into account that reinsurance ceded by resident insurer entities should equal the domestic production of reinsurance accepted by resident insurers from resident entities.

Finally, once the three previous aggregates are determined, and from the accounting identity on reinsurance (production plus imports must be equal to intermediate consumption plus exports), the amount of consumption of reinsurance by this branch activity can be deducted.

3.18 Real estate activities (NACE Rev. 2 Section L)

According to the activity detail at which estimates are compiled, the industries of this section are the following ones:

SUT code	Description	NACE Rev. 2
L68E	Real estate activities (by enterprises)	68
L68R	Services of actual rental of dwellings	
L68A	Imputed rents of owner-occupied dwellings	68

The estimation of this industry has been made distinguishing:

– *Real estate activities* carried out by enterprises. These activities include:

68.1. Buying and selling of own real state

68.2 Rental and operating of own or leased real state

68.3 Real estate activities on a fee or contract basis

For companies that undertake real estate activities data from the Annual Survey of Services are used in the calculation of the output and intermediate consumption of this industry.

– Rental services of residential dwellings. The methodological principles contained in Regulation (EC) 1722/2005 on the principles for calculating rental services of dwellings for the purposes of Regulation (EC, Euratom) 1287/2003 on the harmonisation of Gross National Income at market, were followed. In other words, the stratification method is applied in order to estimate the total output of the residential renting services.

3.18.1 REAL ESTATE ACTIVITIES BY ENTERPRISES

The estimates obtained for output at base prices and for intermediate consumption at acquisition prices for this activity involves obtaining the aggregates output and intermediate consumption from the information on incomes and expenses contained in the Structural Business Statistics (EEE) plus additional information and adjustments according to the following intermediary system

Market output =

+ Net turnover

- Consumption of goods for resale

+ Changes in inventories of finished products

+ Other management income

+ Own-account production

+ Non-observed output

“Net turnover “and “Other management income” are estimated from data from the Structural Business Statistics (EEE).

“Changes in inventories of finished products”, “Own-account production” and “Non-observed output” are obtained as Adjustments.

Consumption of goods for resale = “Net purchases of goods for resale” - “Changes in inventories of goods for resale.

“Net purchases of goods for resale” are estimated from sources, “Changes in inventories of goods for resale” are obtained as Adjustments.

Market intermediate consumptions =

+ Purchases of raw materials and other supplies

- Changes in inventories of raw materials and other supplies

+ Work performed by other companies

+ External services (except insurance premiums)

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ Non-observed intermediate consumptions

"Purchases of raw materials and other supplies", "Work performed by other companies" and "External services (except insurance premiums)" are estimated from data from EEE.

"The Cost of the insurance service" is obtained accordingly to ESA-2010 definitions.

"Changes in inventories of raw materials and other supplies", "Repairs and maintenance expenditures that are gross capital formation" and "Non-observed intermediate consumption" are obtained as Adjustments.

3.18.1.1 Basic Data Sources

The estimate for this industry in the SNA is based on the data provided by the Structural Business Statistics (EEE).

For the calculation of production and intermediate consumption in terms of National Accounts, the EEE microdata are adjusted in order to avoid duplication of companies that were already accounted for in other industries of the sectors S.13 and S.15.

3.18.1.2 Adjustments

a) Validation adjustments are applied:

In particular on repairs and maintenance expenditures, included in the intermediate consumption component "external services". Part of these expenditures is consider to be gross capital formation and not intermediate consumption.

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use

The Changes in inventories of finished products and goods for resale

And in intermediate consumption:

Adjustment for insurance (ESA insurance)

Changes in inventories of raw materials and other supplies

c) Exhaustiveness adjustments:

– Non-observed output (to estimate underground producer as N1 and misreporting as N6) and intermediate consumption (to estimate underground producer as N1) have been calculated.

3.18.2 OUTPUT OF SERVICES OF IMPUTED RENTAL OF OWNER-OCCUPIED DWELLINGS OR TRANSFERRED BY THEM FOR FREE, NEAR-FREE OR AT A LOW PRICE

The estimated *output* of rental services of owner-occupied dwellings has been carried out following the provisions of paragraphs 3.76 *et seq* of the ESA 2010 and indications of *Regulation (EC) 1722/2005 on the principles for calculating rental services of dwellings for the purposes of Regulation (EC, Euratom) 1287/2003 on the harmonisation of Gross National*

Income at market prices. It addresses, on the one hand, that concerning main dwellings[27] and on the other, that concerning the occupancy and use of secondary dwellings.[28]

3.18.2.1 Main dwellings

The estimated output of rental services of owner-occupied main dwellings has been carried out by the recommended *stratification method*. This method has been replicated through a stratification of the stock of main dwellings located in Spain according to three variables: Autonomous Region where the dwelling is located, size of the municipality where it is located (more than 99 999, 20 000-99 000 and less than 20 000 inhabitants) and surface area of the dwelling (less than 60 square metres, 60-74, 75-89 and more than 90).

Therefore, the stratification of the housing stock in the base year is carried out to a suitable level of detail (212 strata have been considered) and it is based on actual rents observed in 206 strata (97.2 per cent of them).

In each stratum the number of main dwellings in Spanish economic territory and by type have been provided by the HBS (HBS estimates are calibrated to reference housing figures which have the last Population and Housing Census as starting point).

The households final consumption expenditure of imputed rents for free or low price rents of main dwellings has been estimated through the difference between the result of the stratification method in this group using the average market price corrected by the exclusion of household furnishings as reference and the result of the stratification method in this group with the observed average rent in this type of dwellings.

3.18.2.2 Secondary dwellings

The estimated output of rental services for owner-occupied dwellings is highly conditioned by the limitations inherent in the information sources available.

With regard to the housing stock, it has not been possible to have an estimate of the number of secondary dwellings in Spain that were intended for temporary use and occupation by their owners, which could enable the application of the stratification method, as a result of the limitations of the Population and Housing Census and other later surveys

With regard to prices, the high variability in the average prices of daily rental observed in secondary dwellings in the sample from the HBS and the scarcity of the sample available, implied a lack of solidity of any estimate obtained with a stratification method, whichever way the strata considered were to be aggregated.

Consequently, for estimating the output of imputed rental of secondary dwellings that is generated as a result of their use by their owners or their transfer by the owners for free, near-free or at a low price, a "corrected" method of self-evaluation has been used. Specifically, the estimate for the base year of final consumption expenditure of households on such services has been estimated with the direct result provided by the HBS on consumer spending of households on this item corrected by a factor to address the

[27] This is the dwelling used all or most of the year as a regular residence.
[28] This is only used part of the year in a seasonal, periodic or sporadic way, and does not constitute the regular residence of one or several persons.

uncertainty that stems from the subjectivity of the survey respondents in their price valuations.

Owing to sources and methods employed and described before, the registration of output of services of imputed rental of owner-occupied dwellings or transferred by them for free, near-free or at a low price is guaranteed according to accrual principle.

For the sources employed, the rents used in the calculation of output of services of imputed rental of owner-occupied dwellings or transferred exclude mostly charges for heating, water, electricity, etc.

To extrapolate the base year housing stock and actual rents the appropriate price, quantity and quality indicators are:

– For the housing stock in main dwellings, the HBS estimate of the number of them by each type (owner-occupied, rented at market prices and free, near free or low price rents) is used every subsequent year

– For actual rents in main dwellings, the CPI in actual rents (COICOP 04.1.1) is used every subsequent year.

– For national secondary dwellings imputed, HBS expenses in COICOP 04.2.2 is used every subsequent year.

Appropriate price, quantity and quality indicators are used to extrapolate the base year housing stock and actual rents

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3.18.3 OUTPUT OF SERVICES OF REAL STATE RENTAL SERVICES CARRIED OUT BY HOUSEHOLDS.

Output of real state rental services carried out by households is based on tax register data. Specifically, declarations of non-professional real estate capital revenues in the Personal Income Tax are used.

For the sources employed, the rents used in the calculation of services of real state rental services carried out by households exclude mostly charges for heating, water, electricity, etc.

3.18.4 FLOWS OF RENTAL SERVICES OF OWNER-OCCUPIED DWELLINGS WITH THE REST OF THE WORLD

A dwelling situated in Spanish economic territory, owned by a non-resident who makes use of it, is considered a *notional resident unit* of the Spanish economy. The use made of it by its owner constitutes an export (non-residents consumption in the Spanish economic territory) of a service produced in the Spanish economy.

In addition, this output generates an income withdrawn from quasi-corporations (use of the national economy; resource of the rest of the world), that corresponds to Net Operating Surplus of such activity.

On the other side, a dwelling situated outside the Spanish economic territory, owned by a resident who uses it, is considered a *notional resident unit* of the rest of the world. The use made of it by its owner constitutes an *import* (final consumption expenditure in the rest of the world).

In addition, it generates an income withdrawn from quasi-corporations (resource of the national economy; use of the rest of the world), that corresponds to Net Operating Surplus of such activity.

3.18.4.1 Dwellings in the Spanish economic territory occupied by their non-resident owners

The output from rental services of dwellings occupied by non-resident owners in Spanish economic territory is estimated as the product of the following factors:

– Average daily rental price of a secondary dwelling.

– Number of overnight stays of non-resident households in owned accommodation.

The estimate of the average daily rental price of a secondary dwelling comes from the daily average expenditure on renting second-residence dwellings of Spain resident households according to the *Household Budget Survey* (HBS), compiled by INE.

The estimate of the number of overnight stays of non-resident households in owned accommodation comes from the total overnight stays of tourists in owned accommodation according to the *Tourist Expenditure Survey* (EGATUR), compiled also by INE, divided by the average non-resident household size (number of persons). This average non-resident household size is estimated using an approximation made with the data published by Eurostat regarding the average household size in the EU, in order to obtain the number of overnight stays of households.

3.18.4.2 Dwellings outside the Spanish economic territory occupied by their resident owners

The output of rental services of resident owner-occupied dwellings outside the Spanish economic territory is estimated as the product of the following factors:

– Average daily rental price of a secondary dwelling outside the Spanish economic territory.

– Number of overnight stays of resident households in owned accommodation outside the Spanish economic territory.

The estimate of the average daily rental price of a secondary dwelling comes from the daily average expenditure on renting second-residence dwellings of Spain resident households according to the *Household Budget Survey* (HBS), compiled by INE, corrected with the average of the *Purchasing Power Parity* index published by Eurostat for the major emitting countries of tourists visiting Spain (Germany, France, Italy, the United Kingdom and the United States) according to EGATUR.

The estimate of the number of overnight stays of resident households in owned accommodation sited in the rest of the world comes from the total overnight stays of resident tourists in owned accommodation in the rest of the world according to the *Spanish Tourist Movement Survey* (ETR), divided by the average resident household size (number of persons); this one, estimated as the division between the Spanish population living in households, and the number of households in Spain (source: INE).

3.18.5 INTERMEDIATE CONSUMPTION IN SERVICES OF IMPUTED RENTAL OF OWNER-OCCUPIED DWELLINGS AND ACTUAL REAL STATE RENTAL SERVICES CARRIED OUT BY HOUSEHOLDS

Regulation (EC) 1722/2005 on the principles for calculating the rental housing services for the purposes of Council Regulation (EC, Euratom) 1287/2003 on the harmonisation of gross national income at market prices refers to three types of expenses related to repairs and maintenance of dwellings:

– "First, improvements to existing fixed assets that go beyond what is necessary for maintenance and repairs are included in gross fixed capital formation."

– "Secondly, expenditures made by home-owners in the decoration, maintenance and repair of the same, which are not carried out by tenants are treated as intermediate consumption in the output of rental services."

– Finally, cleaning, decoration and maintenance of housing, to the extent that these are activities also incumbent on the tenants, are excluded from the output." "The expenses related to these activities should be recorded directly as final consumption by households".

And it adds: "In other words, for owner-occupied dwellings, intermediate consumption should cover the same tasks of ordinary maintenance and repairs that would normally be regarded as intermediate consumption by the landlord for similar rented dwellings. The expenditure on repair and maintenance of the same type typically undertaken by tenants rather than landlords should be treated as final consumption expenditure of households for both tenants and owners occupying their dwellings".

In the same vein, the ESA 2010 (paragraph 3.96) states that the final consumption expenditure of households does not include "expenses that an owner-occupier incurs on the decoration, maintenance and repair of the dwelling not typically carried out by tenants (these expenses are considered intermediate consumption in the output of rental services."

To these expenses are also added, as intermediate consumption of dwelling rental services, those relating to the consumption of multi-risk housing insurance services and financial intermediation services indirectly measured (FISIM) allocated to that output.

Accordingly, the estimation of intermediate consumption in the production of imputed rental of owner-occupied dwellings and actual real state rental services carried out by households has been carried out, as described below:

– Imputed rental services of owner-occupied dwellings:

The estimation of intermediate consumption related to the output of imputed rental services of owner-occupied dwellings has been carried out in the following steps:

1. Estimated spending by home-owners in decorating, maintaining and repairing of homes, not usually carried out by tenants (including amounts paid by households for renovation and repairs by residents' communities):

Household Budget Survey (HBS) estimates the expenditure of resident households in Spain in the following classes of the COICOP/HBS:

a) As final consumption expenditure of households in national accounting terms:

04.3.1 Materials for the regular maintenance and repairs of the dwelling when the repair is performed by the household itself

04.3.2 Services for the maintenance and repairs of the dwelling (occupied).

b) As intermediate consumption of households in national accounting terms:

04.3.3 Materials and services for intermediate consumption (expenditures made by home-owners in the decoration, maintenance and repair of the same, which are not carried out by tenants) for intermediate consumption. It includes amounts paid by households for renovation and repairs by residents' communities.

c) As gross fixed capital formation of households in national accounting terms:

04.3.4 Materials and services for gross fixed capital formation (*improvements to existing fixed assets that go beyond what is necessary for maintenance and repairs*) for gross fixed capital formation. It includes amounts paid by households for renovation and repairs by residents' communities.

2. Estimation of the payments made by the insurance company to repair companies in respect of coverage of claims taking place and being covered by the same under multi-risk insurance policies associated with the dwelling taken out by the owner-occupant.

- Actual real state rental services carried out by households:

They are estimated under the assumption that their weight (not counting those related to FISIMs) over the total of intermediate consumption in services of Imputed rental of owner-occupied dwellings and actual real state rental services carried out by households is the same over the total of Production in services of imputed rental of owner-occupied dwellings and actual real state rental services carried out by households.

As regards intermediate consumption of housing rental services, the sources and estimation methods described above also guarantee registration according to the accrual criterion. Besides, for the sources used the charges for heating, water, electricity, etc. also are excluded from intermediate consumption in dwelling services.

3.19 Professional, scientific and technical activities (NACE Rev. 2 Section M)

According to the activity detail at which estimates are compiled, the industries of this section are the following ones:

SUT code	Description	NACE Rev. 2
M701	Activities of head offices	70.1
M702	Management consultancy activities	70.2
M71	Architectural and engineering activities; technical testing and analysis	71
M72	Scientific research and development	72
M73	Advertising and market research	73
M74	Other professional, scientific and technical activities	74
M75	Veterinary activities	75

This activity includes market and non-market producers:

3.19.1 MARKET PRODUCERS

The estimates obtained for output at base prices and for intermediate consumption at acquisition prices for this activity involves obtaining the aggregates output and

intermediate consumption from the information on incomes and expenses contained in the Structural Business Statistics (EEE) plus additional information and adjustments according to the following intermediary system:

Market output =

+ Net turnover

- Consumption of goods for resale

+ Changes in inventories of finished products

+ Other management income

+ Own-account production

+ Subsidies on products

+ Non-observed output

“Net turnover “and “Other management income” are estimated from data from the Structural Business Statistics (EEE).

“Subsidies on products” are obtained from administrative records.

“Changes in inventories of finished products”, “Own-account production” and “Non-observed output” are obtained as Adjustments.

Consumption of goods for resale = “Net purchases of goods for resale” - “Changes in inventories of goods for resale”.

“Net purchases of goods for resale” are estimated from sources, “Changes in inventories of goods for resale” are obtained as Adjustments.

Market intermediate consumptions =

+ Purchases of raw materials and other supplies

- Changes in inventories of raw materials and other supplies

+ Work performed by other companies

+ External services (except insurance premiums)

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ FISIM

+ Non-observed intermediate consumptions

“Purchases of raw materials and other supplies”, “Work performed by other companies” and “External services (except insurance premiums)” are estimated from data from EEE.

“The Cost of the insurance service” is obtained accordingly to ESA-2010 definitions.

“Changes in inventories of raw materials and other supplies”, “Repairs and maintenance expenditures that are gross capital formation”, “FISIM” and “Non-observed intermediate consumption” are obtained as Adjustments.

3.19.1.1 Basic Data Sources

The estimate for this industry in the SNA is based on the data provided by the Structural Business Statistics (EEE). For the calculation of production and intermediate consumption in terms of National Accounts, the EEE microdata are adjusted in order to avoid duplication of companies that were already accounted for in other industries of the sectors S.13 and S.15.

Within the EEE survey there is a series of annual modules that are fundamental to a deeper analysis of the industries covered. The EEE module constitutes the Statistic on Products in the Services Sector for industries (according to NACE codes) 69.1, 69.2, 70.2, 69.1, 70.10, 71, 73.1 and 73.2 within this activity. This module provides information in relation to the breakdown by products. The distribution by products affects to the core process of compilation and balancing and so to the aggregates.

3.19.1.2 Adjustments

a) Validation adjustments are applied:

In particular on repairs and maintenance expenditures, included in the intermediate consumption component "external services". Part of these expenditures is consider to be gross capital formation and not intermediate consumption.

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use

The Changes in inventories of finished products and goods for resale

The Subsidies on products

And in intermediate consumption:

Adjustment for insurance (ESA insurance)

Changes in inventories of raw materials and other supplies

Allocation of FISIM

c) Exhaustiveness adjustments:

- Non-observed output (to estimate underground producer as N1 and misreporting as N6) and intermediate consumption (to estimate underground producer as N1) have been calculated.

3.19.2 NON-MARKET

The non-market producers identified in this activity section belongs to the *Research and Development* industry (NACE 72) corresponds to branch 61 of the Supply and Use Tables of the Spanish economy. Such producers belong to the institutional sector of the *General Government Sector*, since it is considered that the R&D output of the sector *Non-Profit Institutions at the Service of Households* is not significant.

3.19.2.1 Output

The estimated *production* of this branch of activity is carried out by adding the expenses (costs of production) corresponding to the following groups from the COFOG:

- 1.4 Basic research.
- 1.5 Research and development related to general public services.
- 2.4 Research and development related to defence.
- 3.5 Research and development related to public order and security.
- 4.8 Research and development related to economic affairs.
- 5.5 Research and development related to defence.
- 6.5 Research and development related to housing and community services.
- 7.5 Research and development related to health.
- 8.5 Research and development related to recreation, culture and religion.
- 9.7 Research and development related to education.
- 10.8 Research and development related to social protection

In particular, in the calculation of consumption of fixed capital of assets used in production of R&D three assets are considered: AN.1121 Buildings others than dwellings, AN.1132 ICT equipment and AN.1173 Computer software[29]. The consumption of fixed capital of R&D asset is not included in the calculation of production.

From such expenses, those conducted by universities and public hospitals are discounted, whose R&D output is recorded as *output for own final use* of the branches of activity Education (Section P) and Health and social services activities (section Q)[30]. Thus, the *Research and Development branch* only records the non-market output of R&D carried out by both state and regional public research bodies which have such activity as their main activity. Furthermore, the part of these expenses corresponding to the production of software is excluded[31].

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[29] In line with the paragraph 376 of the Fractal Manual.

[30] The compilation of the estimates related to R & D activities of universities and public hospitals in the General Government Accounts is based on the R & D Statistics, performed by INE, Specifically, from such statistics, R & D estimates are obtained for public universities and public hospitals. To do so, such estimates are based on the results of the aforementioned survey for the directory of universities and hospitals belonging to sector S.13, in accordance with the Inventory of Entities Reporting to the sub-Sectors of the General Government (S.13), published by the Audit Office.

[31] Estimate of software output by the General Government sector follows, as far as possible, the recommendations of the Eurostat "Task Force on Software Measurement" of June 2002, although it is true that its necessary adaptation to ESA 2010 has been carried out in its application.

In this regard, according to ESA 2010 3.45, the valuation of software production for own final use is made, in the case of S.13 sector at the cost of factors, i.e., as the sum of intermediate consumption, compensation of employees, other taxes on production net of subsidies and consumption of fixed capital, all associated with software for own final use. It must be taken into account that the estimation made has obviated the amount that would correspond to other taxes on production net of subsidies, which would be quantitatively negligible.

To be more precise:

- Estimates of compensation of employees associated with software production are based on the results of the Labour Force Survey on the weight represented by public employees who are engaged in occupations 203 Advanced computer professionals and 263 Intermediate computer professionals of CNO 94 over the total number of public employees, on the hypothesis that they dedicate a 20% of their working time to produce software, in each branch of activity (and therefore in each COFOG). This estimates were made for 2010 and are extrapolated onwards according to the GVA of *programming, consultancy and other computer-related services; information services* (NACE 62-63).
- Estimates of intermediate consumption, based on estimates of the number of jobs dedicated to software production for own final use by branch of activity (weight of compensation of employees in the production of software for own final applied to the total number of jobs of the General Government sector in each branch of activity) and the intermediate consumption per worker in the industry programming, consultancy and other computer-related services; information services.
- Estimates of consumption of fixed capital associated with software production is performed by applying to the estimated data of the number of jobs dedicated to software production for own final use by COFOG groups the consumption of fixed capital per worker in the General Government sector by industry.

Output by non-market units in this industry is allocated to the product *scientific research and development services* (CPA 72), except output for own final use of software allocated to the product *programming services, consulting and other computer-related services* (CPA 62).

It is important to mention that R&D estimates were compiled since 1995 as sum of costs of production. On the other hand, the series were back-casted until 1985 to carry out the calculation of the consumption of fixed capital by means of the Permanent Inventory Method (PIM), since the depreciation function of these assets consists of a geometric amortization in the term of 10 years.

For such back-casting, the historical series of the R & D Statistics were used. Specifically the variation rate of the total internal expenses in R&D for the General Government which are covered for the period from 1964 to 2001.

3.19.2.2 Intermediate consumption

The estimate of intermediate consumption of this industry is performed by aggregating the intermediate consumption of the COFOG groups mentioned in the previous point, excluding universities and public hospital figures.

The estimate of intermediate consumption in insurance and pension plans is performed similarly to that described for the O branch of activity. The distribution of the remaining aggregate of intermediate consumption by products are carried out by applying the percentage structure of intermediate consumption by product of the market units in the same branch of activity.

As regards the acquisition of R&D services, it is always accounted as gross fixed capital formation except for the NACE 72, where purchases of R&D services are treated as intermediate consumption due to the assumption they are used to produce more R&D services (its principal activity).

3.20 Administrative and support service activities (NACE Rev. 2 Section N)

According to the activity detail at which estimates are compiled, the industries of this section are the following ones:

SUT code	Description	NACE Rev. 2
N77	Rental and leasing activities	77
N78	Employment activities	78
N79	Travel agency, tour operator and other reservation services and related activities	79
N80	Security and investigation activities	80
N81	Services to buildings and landscape activities	81
N82	Office administrative, office support and other business support activities	82

The estimates obtained for output at base prices and for intermediate consumption at acquisition prices for this activity involves obtaining the aggregates output and intermediate consumption from the information on incomes and expenses contained in the Structural Business Statistics (EEE). plus additional information and adjustments according to the following intermediary system:

Market output =

+ Net turnover

- Consumption of goods for resale

+ Changes in inventories of finished products

+ Other management income

+ Own-account production

+ Subsidies on products

+ Non-observed output

“Net turnover “and “Other management income” are estimated from data from the Structural Business Statistics (EEE).

“Subsidies on products” are obtained from administrative records.

“Changes in inventories of finished products”, “Own-account production” and “Non-observed output” are obtained as Adjustments.

Consumption of goods for resale = “Net purchases of goods for resale” - “Changes in inventories of goods for resale”.

“Net purchases of goods for resale” are estimated from sources, “Changes in inventories of goods for resale” are obtained as Adjustments.

Market intermediate consumptions =

+ Purchases of raw materials and other supplies

- Changes in inventories of raw materials and other supplies

+ Work performed by other companies

+ External services (except insurance premiums)

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ FISIM

+ Non-observed intermediate consumptions

“Purchases of raw materials and other supplies”, “Work performed by other companies” and “External services (except insurance premiums)” are estimated from data from EEE.

“The Cost of the insurance service” is obtained accordingly to ESA-2010 definitions.

“Changes in inventories of raw materials and other supplies”, “Repairs and maintenance expenditures that are gross capital formation”, “FISIM” and “Non-observed intermediate consumption” are obtained as Adjustments.

3.20.1 BASIC DATA SOURCES

The estimate for this industry in the SNA is based on the data provided by the Structural Business Statistics (EEE).

For the calculation of production and intermediate consumption in terms of National Accounts, the EEE microdata are adjusted in order to avoid duplication of companies that were already accounted for in other industries of the sectors S.13 and S.15.

Within the EEE survey there is a series of annual modules that are fundamental to a deeper analysis of the industries covered. The EEE module constitutes the Statistic on Products in the Services Sector for industries (according to NACE codes) 78, 79.1 and 81.2 within this activity. This module provides information in relation to the breakdown by products. The distribution by products affects to the core process of compilation and balancing and so to the aggregates.

For NACE Rev. 2 code 79 Travel agency, and due to the rule that in the case of the industry *tour operator reservation service and related activities,* the output of travel agencies has to be measured taking into account the commissions and fees but not the total amount of clients' expenses, the calculation of variables for this industry.

Production of tour operators, as regarding travel packages created by them and using different components such as the travel, the accommodation, etc. are handled in a special way. The main source used in order to estimate the value of the output of this industry is the EEE and data from its annual module, the Statistic on Products in the Services Sector for travel agencies and tour operator activities that refers mainly to travel packages.

These statistics collects information about the turnover for different services offered by the enterprises: travel packages made by the same enterprise, travel packages made by other enterprises, plane tickets, accommodation, etc. The module also collects information about the expenses made by the enterprise: components of travel packages (in case the enterprise produce directly this service), travel packages made by other enterprises, plane tickets, accommodation, etc.

From the information collected in the survey and in the statistics on products it is possible to estimate the value of output in accordance with the recommendations of ESA2010, by way of considering the various services which the travel agencies provide: on the one hand, simple intermediation between the passenger and the transport and hotel companies, measured by the margin; on the other hand, the sale of the travel package product (in reality a combination of products that are sold together as undividable package). In the case of travel packages made by other enterprises, the output is measured by the margin. The form in which the information is gathered permits consolidation of the economic flows between the different agents who operate in the market (wholesalers and retailers), providing by type of agent the revenues according to the different operations specific to each of them: sale of holiday packages, revenue in the form of commissions received from companies handling the various means of transport, from hotel and food and drink companies, from other businesses, and also revenue for the provision of services as suppliers of tourist information and as guides.

In this case, to calculate output there is a differentiation between the goods for resale that is not intended to form part of a new package or the goods for resale is a package made by other enterprise, which determines the margins of the agencies and, therefore, forms part of the calculation of the output, reducing the value of turnover.

On the other hand, the goods for resale that is intended to form the travel packages is considered part of the intermediate consumption of the activity.

Therefore, this adjustment affects to output and intermediate consumption by the same amount, leaving the GVA unchanged.

3.20.2 ADJUSTMENTS

a) Validation adjustments are applied:

In particular on repairs and maintenance expenditures, included in the intermediate consumption component "external services". Part of these expenditures is consider to be gross capital formation and not intermediate consumption.

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use

The Changes in inventories of finished products and goods for resale

The Subsidies on products

And in intermediate consumption:

Adjustment for insurance (ESA insurance)

Changes in inventories of raw materials and other supplies

Allocation of FISIM

c) Exhaustiveness adjustments:

– Non-observed output (to estimate underground producer as N1 and misreporting as N6) and intermediate consumption (to estimate underground producer as N1) have been calculated.

3.21 Public administration and defence; compulsory social security (NACE Rev. 2 Section O)

This industry includes only non-market production units, including all general government activities that have not been classified in other major branches. It corresponds to branch 71 of the Supplying and Use Tables of the Spanish economy.

In general, the estimates of the aggregate production and intermediate consumption of all non-market production units classified in each industry is based on the General Government Sector Accounts, prepared by the Audit Office (IGAE from its Spanish initials), especially on the results of the functional classification of expenditure in the Government sector (COFOG). In addition, use is made of economic information from the different business units classified in the sector, provided also by the IGAE, and budgetary payments by the non-business units that are part of it.

The functional classification of the expenditures of the government sector, compiled annually by the IGAE, groups the different programmes into which it is classified the spending by the institutional units that make up the sector in their respective budgetary settlements in the divisions and groups defined in the COFOG, while also performing a conversion of the expenditures recorded in the public accounts into national accounting transactions. These results allow us to carry out an assignment of each of the components of spending in the sector by industry depending on their classification according to COFOG.

We must bear in mind that, in accordance with the ESA methodology, the total production of these units is valued as a sum of costs (compensation of employees, intermediate consumption, consumption of fixed capital and other taxes less subsidies on production). Thus, the functional classification of expenditure in the sector allows the distribution of the components thereof by industry and thus gives aggregate output and intermediate consumption in the sector and therefore its Gross Value Added.

Furthermore, although it involves non-market production units, they also perform secondary market production and production for own final use. The classification of market production (P.11), on the one hand, and output for own final use (P.12), on the other hand, by the institutional units that make up the Government Sector part of each division and group of the COFOG can determine the value of market production (secondary) and for own final use by the non-market producers that comprise each industry.

With regard to the time recording of General Government aggregates, accruals principle is followed in all the transactions, compliant with ESA 2010 and Manual on General Government Deficit and Debt. With this purpose, the accounting information received from units composing the S.13, allows for registering of transactions according to the accruals principle. Specifically, the accrual principle is established in the accounting rules to which the General Government institutional units are subject. In accordance with current regulation, on a general basis, it is mandatory that the statements of these units are audited so that the accrual principle is verified in the registration of transactions.

3.21.1 OUTPUT

The estimated *production* of this industry is carried out by adding the expenses that correspond with each of its components and the following divisions and groups from COFOG:

- 01 General Utilities, except the functions relating to R&D.
- 02 Defence, except the function relating to R&D.
- 03 Public order and safety, except the function relating to R&D.
- 04 Economic affairs, except the function relating to R&D.
- 05.4 Protection of biodiversity and the landscape.
- 06 Housing and community services, except the functions relating to R&D and water supply.
- Other costs that cannot be assigned to a specific COFOG group (groups 07.6, 08.6, 09.8 and 10.9).

Moreover, this branch includes social protection of functions from 10.1 to 10.5 relating to managing bodies of Social Security and the Public Employment Services.

The distribution of the *production* of this industry by product is accomplished by assigning the compensation of employees, intermediate consumption and production taxes paid of non-business units to the product 84 *Public administration and defence; compulsory social security* and the output of public sector companies to the main product of its activity according to its NACE code, using the direct relationship existing between activities (*National Classification of Economic Activities, CNAE 2009*) and products (*Classification of Products by Activity, CPA 2008*). As for the fourth component of the production cost of the units of this industry, consumption of fixed capital, this product is distributed in proportion to the gross fixed capital formation thereof.

3.21.2 INTERMEDIATE CONSUMPTION

The estimate of *intermediate consumption* of this industry is performed by aggregating the classified *intermediate consumption* into the following divisions and groups from COFOG:

- 01 General Utilities, except the functions relating to R&D.
- 02 Defence, except the function relating to R&D.
- 03 Public order and safety, except the function relating to R&D.
- 04 Economic affairs, except the function relating to R&D.
- 05.4 Protection of biodiversity and the landscape.
- 06 Housing and community services, except the functions relating to R&D and water supply.
- Other costs that cannot be assigned to a specific COFOG group (groups 07.6, 08.6, 09.8 and 10.9).

It should be noted that, in accordance with the ESA 2010, the acquisition of weapons systems which are dedicated for a year or more to the production of defence services are not considered *intermediate consumption* of this industry, but *gross fixed capital formation* of the *Government Sector* part.

The intermediate consumption of insurance and pension services are determined by applying to D.71 *Net premiums of non-life insurance* of the corresponding functions of COFOG that make this branch the weight of the production of non-life insurance services over the earned premiums for each year of the subsector S.128 *Insurance companies* in the national economy.

The distribution of intermediate consumption of this industry by products (excluding FISIM and insurance services and pension) is carried out in two stages:

- On the one hand, the total intermediate consumption of non-business units belonging to each subsector of government (State and autonomous bodies, regional governments, local authorities and social security) is applied to the percentage structure of current expenditure of each subsector listed in the recognized obligations of the State Administration in the State Budget for the year concerned, for spending origin and concept, using additional assumptions to reach the level of disaggregation required for each product.

– On the other hand, to the total intermediate consumption of business units classified according to their branch of activity, the percentage structure of intermediate consumption of aggregate market units in the same branch of activity available is applied in the previous estimate to end balance resources-employment of the target table for the reference year.

3.22 Education (NACE Rev. 2 Section P)

According to the activity detail at which estimates are compiled, the industries of this section are the following one:

SUT code	Description	NACE Rev. 2
P85	Education	85

This activity includes non-market and market producers:

3.22.1 MARKET EDUCATION

The estimates obtained for output at base prices and for intermediate consumption at acquisition prices for this activity involves obtaining the aggregates output and intermediate consumption from the Structural Business Survey (EEE), plus additional information and adjustments according to the following intermediary system:

Market output =

+ Net turnover

- Consumption of goods for resale

+ Changes in inventories of finished products

+ Other management income

+ Own-account production

+ Subsidies on products

+ Non-observed output

“Net turnover “and “Other management income” are estimated from data from the EEE.

“Subsidies on products” are obtained from administrative records.

“Changes in inventories of finished products”, “Own-account production” and “Non-observed output” are obtained as Adjustments.

Consumption of goods for resale = “Net purchases of goods for resale” - “Changes in inventories of goods for resale”.

“Net purchases of goods for resale” are estimated from sources, “Changes in inventories of goods for resale” are obtained as Adjustments.

Market intermediate consumptions =

+ Purchases of raw materials and other supplies

- Changes in inventories of raw materials and other supplies

+ Work performed by other companies

+ External services (except insurance premiums)

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ FISIM

+ Non-observed intermediate consumptions

"Purchases of raw materials and other supplies", "Work performed by other companies" and "External services (except insurance premiums)" are estimated from data from EEE.

"The Cost of the insurance service" is obtained accordingly to ESA-2010 definitions.

"Changes in inventories of raw materials and other supplies", "Repairs and maintenance expenditures that are gross capital formation", "FISIM" and "Non-observed intermediate consumption" are obtained as Adjustments.

3.22.1.1 Basic Data Sources

The estimate for this industry in the SNA is based on EEE microdata. Also the Private Education Finance and Expenditure Survey (EFINYGAS from its Spanish initials), developed by the INE, is used for product breakdown.

For the calculation of production and intermediate consumption in terms of National Accounts, DIRCE was previously filtered to ensure the absence of companies belonging to sectors S13 or S15.

3.22.1.2 Adjustments

a) Validation adjustments are applied:

In intermediate consumption, in particular on repairs and maintenance expenditures (included in the intermediate consumption component "external services") considering that part of these expenditures are gross capital formation.

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use

The Changes in inventories of finished products and goods for resale

The Subsidies on products

And in intermediate consumption:

Adjustment for insurance (ESA insurance)

Changes in inventories of raw materials and other supplies

Allocation of FISIM

c) Exhaustiveness adjustments:

- Non-observed output (to estimate underground producer as N1 and misreporting as N6) and intermediate consumption (to estimate underground producer as N1) have been calculated.

3.22.2 GENERAL GOVERNMENT SECTOR

3.22.2.1 Output

The estimated *output* of the *General Government Sector* in this industry is carried out by adding all the expenses that are production costs from the following COFOG groups:

- 9.1 Pre-school and primary education.
- 9.2 Secondary education.
- 9.3 Post-secondary non-tertiary education.
- 9.4 Higher education.
- 9.5 Education not definable by level.
- 9.6 Subsidiary services to education.

Output of *scientific research and development services* is also added from these same units, which is estimated by adding the expenditure of public universities classified in each of the components that are production costs of the following COFOG groups:

- 1.4 Basic research.
- 1.5 Research and development related to general public services.
- 2.4 Research and development related to defence.
- 3.5 Research and development related to public order and security.
- 4.8 Research and development related to economic affairs.
- 5.5 Research and development related to environmental protection
- 6.5 Research and development related to housing and community services.
- 7.5 Research and development related to health.
- 8.5 Research and development related to recreation, culture and religion.
- 9.7 Research and development related to education.
- 10.8 Research and development related to social protection

Finally, there is also an estimation of *output for own final use* of software by the *General Government Sector* in this industry.

The output of this branch of activity is allocated to the product *education services* (CPA 85), except output for own final use of software and R&D output, both allocated to the respective *products programming, consulting and other computer-related services* (CPA 62) and *Scientific research and development services* (CPA 72).

Market output is compiled through the P.11 data of the General Government Sector by COFOG that are provided by the Audit Office as part of the compilation of the General

Government Accounts (P.11 related to sales of R&D projects made by public universities come from the R&D Statistics performed by INE). In particular, the list of fees, public prices and other revenue collected by subsectors S.1311 and S.1313 are allocated to taxes and market output according to the criteria established in ESA 2010 (paragraphs 3.27-3.41 and 20.05-20.55).

Output for final use figures correspond to the output of *scientific research and development services* minus the former sales.

3.22.2.2 Intermediate consumption

The estimation of *intermediate consumption* of this branch of activity is performed by aggregating the *intermediate consumption* from the groups of the COFOG mentioned in the previous point (in the case of those relating to R&D, only expenditure relating to public universities).

The estimation of intermediate consumption in insurance services and pension schemes is performed as described for the branch of activity O. The distribution of the remaining aggregate of *intermediate consumption* of this industry has been carried out using the information provided by the *Private Education Finance and Expenditure Survey* (FINYGAS from its Spanish initials). This is a survey conducted by the INE every five years, which elicits detailed information about different items of intermediate consumption by level of education (kindergarten, primary, secondary, tertiary) in private education using the following allocation of the same products, and additional hypotheses for the distribution of different types of consumption of products provided by FINYGAS:

- Consumption of consumables (teaching, laboratory materials) and other teaching expenses (repair and maintenance of furniture): mainly to book publishing services (CPA 58.1), toys, music and sports equipment (CPA 32), pens and pencils (CPA 32), software (CPA 58.2) and motion picture services, video and television, sound recording and music editing (CPA 59).

- Expenditure on buildings (repair and maintenance of buildings, electricity and water supplies, work done by other companies, etc.): mainly to special trade construction work (CPA 43), repair and installation of machinery and equipment (CPA 33), repair of computers (CPA 95), production, transport and distribution of electricity services (CPA 35.1), coke and oil refining (CPA 19), services to buildings and landscape (CPA 81), security and research services (CPA 80), architectural and engineering services; technical testing and analysis services (CPA 71) and other professional, scientific and technical services (CPA 75).

- General administrative expenses (spending on non-inventoried material, spending on communications, etc.): mainly to telecommunications services (CPA 61), paper and cardboard articles (CPA 17.2), publishing services of books, periodicals and other publishing services (CPA 58.1).

- Other general expenses (financial expenses, advertising expenses, etc.): mainly to advertising and market research (CAP 73) and administrative services, office and other support services to enterprises (CPA 82).

Under the assumption that the *intermediate consumption* composition required in private educational institutions are similar to those required in public schools, the percentage structure is applied by product thereof deducted from FINYGAS from the total *intermediate consumption* of the *General Government Sector* in this branch of activity.

3.22.3 NON-PROFIT INSTITUTIONS SERVING HOUSEHOLDS (NPISH)

3.22.3.1 Output

The estimated output of the private non-market producers of this industry is carried out by adding the expenses of these that correspond to each of its components of those non-profit institutions classified under this industry with data provided from Corporate Tax, estimated through the general method described in section S.

Market output is identified through information available in the individual economic reports (in relation with sales of merchandise, home-produced products, service sales, etc.)

Output for private non-market units of this industry is assigned to the main product *Education services* (CPA 85).

3.22.3.2 Intermediate consumption

The estimate of intermediate consumption of non-market units under private control in this industry is performed according to the method described in section S.

Intermediate consumption of insurance services and pension plans institutions pertaining to the non-profit sector are determined by applying the same weight thereof in total intermediate consumption of these units in the Supply and Use Table of former accounting bases. The distribution of the remaining intermediate consumption of products is carried out applying the percentage breakdown (by product) of intermediate consumption of the non-market public units of this industry.

3.23 Human health and social work activities (NACE Rev. 2 Section Q)

According to the activity detail at which estimates are compiled, the industries of this section are the following ones:

SUT code	Description	NACE Rev. 2
Q86	Human health activities	86
Q87	Residential care activities	87
Q88	Social work activities without accommodation	88

This activity includes non-market and market producers:

3.23.1 MARKET HEALTH AND SOCIAL SERVICE ACTIVITIES

The estimates obtained for output at base prices and for intermediate consumption at acquisition prices for this activity involves obtaining the aggregates output and

intermediate consumption from the EEE microdata plus additional information and adjustments according to the following intermediary system:

Market output =

+ Net turnover

- Consumption of goods for resale

+ Changes in inventories of finished products

+ Other management income

+ Own-account production

+ Subsidies on products

+ Non-observed output

“Net turnover “and “Other management income” are estimated from data from EEE.

“Subsidies on products” are obtained from administrative records.

“Changes in inventories of finished products”, “Own-account production” and “Non-observed output” are obtained as Adjustments.

Consumption of goods for resale = “Net purchases of goods for resale” - “Changes in inventories of goods for resale”.

“Net purchases of goods for resale” are estimated from sources, “Changes in inventories of goods for resale” are obtained as Adjustments.

Market intermediate consumptions =

+ Purchases of raw materials and other supplies

- Changes in inventories of raw materials and other supplies

+ Work performed by other companies

+ External services (except insurance premiums)

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ FISIM

+ Non-observed intermediate consumptions

“Purchases of raw materials and other supplies”, “Work performed by other companies” and “External services (except insurance premiums)” are estimated from data from EEE.

“The Cost of the insurance service” is obtained accordingly to ESA-2010 definitions.

“Changes in inventories of raw materials and other supplies”, “Repairs and maintenance expenditures that are gross capital formation”, “FISIM” and “Non-observed intermediate consumption” are obtained as Adjustments.

3.23.1.1 Basic Data Sources

The estimate for this industry in the SNA is based on EEE microdata. Also the Statistics on Health Care Centers (SIAE), is used for product breakdown.

For the calculation of production and intermediate consumption in terms of National Accounts, DIRCE was previously filtered to ensure the absence of companies belonging to sectors S13 or S15.

3.23.1.2 Adjustments

a) Validation adjustments are applied:

In intermediate consumption, in particular on repairs and maintenance expenditures (included in the intermediate consumption component "external services") considering that part of these expenditures are gross capital formation.

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use

The Changes in inventories of finished products and goods for resale

The Subsidies on products

And in intermediate consumption:

Adjustment for insurance (ESA insurance)

Changes in inventories of raw materials and other supplies

Allocation of FISIM

c) Exhaustiveness adjustments:

– Non-observed output (to estimate underground producer as N1 and misreporting as N6) and intermediate consumption (to estimate underground producer as N1) have been calculated.

3.23.2 GENERAL GOVERNMENT SECTOR

3.23.2.1 Output

The estimated *output* of the *General Government Sector* in this industry is carried out by adding all the expenses that are production costs from the following COFOG groups:

– 7.1 Medical products, devices and equipment.

– 7.2 Outpatient services.

– 7.3 Hospital services.

– 7.4 Public health services.

– 8.4 Religious and other community services.

– 10 Social protection, excluding the groups for R&D, and group 10.9-Social protection n.e.c., as well as those relating to managing bodies of the Social Security and the Public Employment Services (whose amounts approximate through staff costs, current

expenses and real investments reflected in the annual budget of the Social Security and in the audit report from SEPE for those administrative entities) of the functions 10.1 to 10.5

Output of scientific research and development services is also added from these same units, which is estimated by adding the expenditure of public hospitals classified in each of the components that are production costs of the COFOG group 7.5 Research and development related to health.

Finally, there is also an estimation of the *output for own final use* of software by the *General Government Sector* in this industry.

Market output is compiled through the P.11 data of the General Government Sector by COFOG that are provided by the Audit Office as part of the compilation of the General Government Accounts. In particular, the list of fees, public prices and other revenue collected by subsectors S.1311 and S.1313 are allocated to taxes and market output according to the criteria established in ESA 2010 (paragraphs 3.27-3.41 and 20.05-20.55).

Output for final use figures correspond to the output of *scientific research and development services,* estimated through the R&D Statistics, performed by INE.

The *output* of the *general government sector* in this branch of activity is allocated to the products *healthcare services* (CPA 86) and *social services* (CPA 87 + 88) according to the COFOG function that originates the spending. That is, the sum of costs of functions 7.1 to 7.4 related to health are assigned to the CPA 86 product while functions 8.4 and 10, above mentioned, are the ones which give rise to the production of social services in the CPA product 87 + 88.

Output for own final use of software and R&D is assigned to the products *programming, consulting and other computer-related services* (CPA 62) and *scientific research and development services* (CPA 72), respectively.

3.23.2.2 Intermediate Consumption

The estimation of *intermediate consumption* of this industry is performed by aggregating the *intermediate consumption* of the COFOG groups mentioned in the previous point (in the case of the group relating to R&D, only those for hospitals and public health centres).

The estimation of intermediate consumption in insurance services and pension schemes is performed as described for the branch of activity O. The distribution of the remaining aggregate of *intermediate consumption* of the *General Government Sector* in this branch of activity by products, as regards health activities, is carried out using the information provided by the *System of Primary Care Information* (SIAE from its Spanish initials) and the *Statistics on Inpatient Health Centres* (ESCRI from its Spanish initials), prepared by the Ministry of Health. The first one provides information on the different types of spending for public hospitals. In addition, the ESCRI provides an even more detailed description of each of these types of expenditure by product. This allows the distribution of the total of these *intermediate consumption* by products according to the percentage structure of spending of public hospitals according to both sources, according to the following assignment:

- Expenditure on pharmaceuticals: basic pharmaceutical products and preparations (CPA 30). In addition to the method described in this category, auxiliary information from the annual activity reports of the National Business Association of the

Pharmaceutical Industry (Farmaindustria) about the use of medicines in hospitals as a source of contrast it is used.

- Purchase of medical consumption material: Pacemakers (CPA 26.3 in 26.8), plates and bone screws (CPA 32), catheters, probes, manifolds and dialysis membranes (CPA 32), material for cures (CPA 32), laboratory reagents (CPA 20.3 + 20.4 + 20.5) and test tubes (CPA 23.1).
- Care services and tasks provided by other companies: mainly to health care services (CPA 86), services to buildings and landscape (CPA 81) and food and beverage services (CPA 56).
- Rest of purchases: mainly food products (CPA 10), Coke and refined petroleum products (CPA 19), instrumental and small tools (CPA 32) and clothing and footwear (CPA 13 + 14).
- External supplies and services: mainly to special trade construction work (CPA 43), repair and installation of machinery and equipment (CPA 33) and production, transportation and distribution of electricity services (CPA 35.1).

With regard to the activity of social services, the distribution of such *intermediate consumption* by products is carried out applying the information and percentage breakdown by product of intermediate consumption of the similar market industry.

3.23.3 NON-PROFIT INSTITUTIONS SERVING HOUSEHOLDS (NPISH)

3.23.3.1 Output

The estimated output for the non-market private producers of this industry is carried out by adding the expenses of these that correspond to each of its components of those non-profit institutions classified under this industry with data provided from Corporate Tax, estimated through the general method described in section S.

Market output is identified through information available in the individual economic reports (in relation with sales of merchandise, home-produced products, service sales, etc.)

Output for private non-market units of this industry is assigned to the main products *Health care services* (CPA 86) and *Social services* (CPA 87-88).

3.23.3.2 Intermediate consumption

The estimate of intermediate consumption of non-market units under private control in this industry is performed according to the method described in section S.

Intermediate consumption of insurance services and pension plans institutions pertaining to the non-profit sector are determined by applying the same weight thereof in total intermediate consumption of these units in the Supply and Use Table of former accounting series. The distribution of the remaining intermediate consumption of products is carried out applying the percentage breakdown (by product) of intermediate consumption of the non-market public units of this industry.

3.24 Arts, entertainment and recreation (NACE Rev. 2 Section R)

According to the activity detail at which estimates are compiled, the industries of this section are the following ones:

SUT code	Description	NACE Rev. 2
R90	Creative, arts and entertainment activities	90
R91	Libraries, archives, museums and other cultural activities	91
R92	Gambling and betting activities	92
R93	Sports activities and amusement and recreation activities	93

This activity includes market and non-market producers:

3.24.1 MARKET PRODUCERS

The estimates obtained for output at base prices and for intermediate consumption at acquisition prices for this activity involves obtaining the aggregates output and intermediate consumption from the information on incomes and expenses contained in the Structural Business Statistics (EEE) plus additional information and adjustments according to the following intermediary system:

Market output =

+ Net turnover

- Consumption of goods for resale

+ Changes in inventories of finished products

+ Other management income

+ Own-account production

+ Subsidies on products

+ Non-observed output

“Net turnover “and “Other management income” are estimated from data from the Structural Business Statistics (EEE).

“Subsidies on products” are obtained from administrative records.

“Changes in inventories of finished products”, “Own-account production” and “Non-observed output” are obtained as Adjustments.

Consumption of goods for resale = “Net purchases of goods for resale” - “Changes in inventories of goods for resale”.

“Net purchases of goods for resale” are estimated from sources, “Changes in inventories of goods for resale” are obtained as Adjustments.

Market intermediate consumptions =

+ Purchases of raw materials and other supplies

- Changes in inventories of raw materials and other supplies

+ Work performed by other companies

+ External services (except insurance premiums)

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ FISIM

+ Non-observed intermediate consumptions

"Purchases of raw materials and other supplies", "Work performed by other companies" and "External services (except insurance premiums)" are estimated from data from EEE.

"The Cost of the insurance service" is obtained accordingly to ESA-2010 definitions.

"Changes in inventories of raw materials and other supplies", "Repairs and maintenance expenditures that are gross capital formation", "FISIM" and "Non-observed intermediate consumption" are obtained as Adjustments.

3.24.1.1 Basic Data Sources

The estimate for this industry in the SNA is based on the data provided by the Structural Business Statistics (EEE).

For the calculation of production and intermediate consumption in terms of National Accounts, the EEE microdata are adjusted in order to avoid duplication of companies that were already accounted for in other industries of the sectors S.13 and S.15

3.24.1.2 Adjustments

a) Validation adjustments are applied:

In particular on repairs and maintenance expenditures, included in the intermediate consumption component "external services". Part of these expenditures is consider to be gross capital formation and not intermediate consumption.

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use

The Estimate of Entertainment, Literary and Artistic original

The Changes in inventories of finished products and goods for resale

The Subsidies on products

And in intermediate consumption:

Adjustment for insurance (ESA insurance)

Changes in inventories of raw materials and other supplies

Allocation of FISIM

c) Exhaustiveness adjustments:

– Non-observed output (to estimate underground producer as N1 and misreporting as N6) and intermediate consumption (to estimate underground producer as N1) have been calculated.

Estimates of illegal gambling are added in this activity.

3.24.2 GENERAL GOVERNMENT SECTOR

3.24.2.1 Output

The estimated *output* of this industry is carried out by adding the expenses pertaining to each of its components of the following groups from the COFOG:

– 8.1 Recreational and sporting services

– 8.2 Cultural services

Finally, there is also an estimation of the *output for own final use of software* by the General Government Sector in this branch of activity.

Market output is compiled through the P.11 data of the General Government Sector by COFOG that are provided by the Audit Office as part of the compilation of the General Government Accounts. In particular, the list of fees, public prices and other revenue collected by subsectors S.1311 and S.1313 are allocated to taxes and market output according to the criteria established in ESA 2010 (paragraphs 3.27-3.41 and 20.05-20.55).

Output for final use figures correspond to the output of *scientific research and development services,* estimated through the R&D Statistics, performed by INE.

The output of this branch of activity is allocated entirely to the products creative, arts and entertainment services (CPA 90), libraries, archives, museums and other cultural services (CPA 91) and sporting, recreational and entertainment services (CPA 93) except for output for own final use of software, which is allocated to the product programming services, consulting and other computer-related services (CPA 62).

Specifically, output from expenses classified in group 8.1 of the COFOG is allocated to the product sports, recreation and entertainment services; the output from expenses classified in group 8.2 of the COFOG is allocated to the product creative, arts and entertainment services and libraries, archives, museums and other cultural services. It is broken down between the pair based on the information published by Yearbook of the Ministry of Education, Vocational Training and Sport (MEFPD), which provides the expenditure paid by this Ministry according to its use, whether cultural goods and services, or visual, performing and musical arts; applying the same percentage structure of cultural goods and services, on the one hand and plastic, performing and musical arts, on the other.

3.24.2.2 Intermediate consumption

The estimation of *intermediate consumption* of this industry is performed by aggregating the *intermediate consumption* from the COFOG groups mentioned in the previous point.

The estimate of intermediate consumption in insurance and pension plans is performed similarly to that described for the O branch of activity. The distribution of the remaining aggregate of *intermediate consumption* by products is carried out by applying the

percentage structure of *intermediate consumption* by product of the market units in the same branch of activity.

3.24.3 NON-PROFIT INSTITUTIONS SERVING HOUSEHOLDS (NPISH)

3.24.3.1 Output

The estimated output of the private non-market producers of this industry is carried out by adding the expenses of these that correspond to each of its components of those non-profit institutions classified under this industry with data provided by Corporate Tax, estimated through the general method described in section S.

Market output is identified through information available in the individual economic reports (in relation with sales of merchandise, home-produced products, service sales, etc.)

Output for private non-market units of this industry is assigned to the main product *Artistic, recreational and entertainment activities* (CPA 93).

3.24.3.2 Intermediate consumption

The estimate of intermediate consumption of non-market units under private control in this industry is performed according to the method described in section S.

Intermediate consumption of insurance services and pension plans institutions pertaining to the non-profit sector are determined by applying the same weight thereof in total intermediate consumption of these units in the Supply and Use Table of former accounting bases. The distribution of the remaining intermediate consumption of products is carried out applying the percentage breakdown (by product) of intermediate consumption of the non-market public units of this industry.

3.25 Other service activities (NACE Rev. 2 Section S)

This activity includes non-market and market producers:

3.25.1 MARKET PRODUCERS

According to the activity detail at which estimates are compiled, the industries of this sections are the following ones:

SUT code	Description	NACE Rev. 2
S94	Activities of membership organisations	94
S95	Repair of computers and personal and household goods	95
S96	Other personal service activities	96

The estimates obtained for output at base prices and for intermediate consumption at acquisition prices for this section involves obtaining the aggregates output and intermediate consumption as follows:

– For NACE code 94 from the Corporate Tax and the Personal Income Tax provided by the Tax Agency on companies classified under this economic activity (according to DIRCE, the Spanish Central Business Register).

– For NACE codes 95 and 96 from the information on incomes and expenses contained in the Structural Business Statistics (EEE).

In both cases, additional information and adjustments are applied according to the following intermediary system:

Market output =

+ Net turnover

- Consumption of goods for resale

+ Changes in inventories of finished products

+ Other management income

+ Own-account production

+ Subsidies on products

+ Non-observed output

• "Net turnover "and "Other management income" are estimated from data from the Corporate Tax and the Personal Income Tax (NACE code 94) and from the Structural Business Statistics (EEE for NACE codes 95 and 96).

• "Subsidies on products" are obtained from administrative records.

• "Changes in inventories of finished products", "Own-account production" and "Non-observed output" are obtained as Adjustments.

• Consumption of goods for resale = "Net purchases of goods for resale" - "Changes in inventories of goods for resale".

• "Net purchases of goods for resale" are estimated from sources, "Changes in inventories of goods for resale" are obtained as Adjustments.

Market intermediate consumptions =

+ Purchases of raw materials and other supplies

- Changes in inventories of raw materials and other supplies

+ Work performed by other companies

+ External services (except insurance premiums)

- Repairs and maintenance expenditures that are gross capital formation.

+ Cost of the insurance service

+ FISIM

+ Non-observed intermediate consumptions

• "Purchases of raw materials and other supplies", "Work performed by other companies" and "External services (except insurance premiums)" are estimated from data from (NACE code 94) and from the Structural Business Statistics (EEE for NACE codes 95 and 96).

- "The Cost of the insurance service" is obtained accordingly to ESA-2010 definitions.
- "Changes in inventories of raw materials and other supplies", "Repairs and maintenance expenditures that are gross capital formation", "FISIM" and "Non-observed intermediate consumption" are obtained as Adjustments.

3.25.1.1 Basic Data Sources

The estimate for this industry in the SNA is based on the following data:

– NACE code 94:

The estimate for this industry in the SNA is based on administrative records, in particular on data provided by the Corporate Tax and the Personal Income Tax.

For the calculation of production and intermediate consumption in terms of National Accounts, DIRCE was previously filtered to ensure the absence of companies belonging to sectors S13 or S15.

The intermediate system, including the correspondence with the variables of the Tax Agency registers is as follows:

a) Corporate Tax:

OUTPUT (P1)	**SOURCE**	**Variables of the register**	**Relationship with the General Accounting Plan**
(+) Net turnover	Corporate Tax	(+) IS_255 Net turnover	(+) c700. Goods for resale sold (+) c701. Finished goods sold (+) c702. Semi-finished goods sold (+) c703. By-products and waste sold (+) c704. Containers and packaging sold (+) c705. Services rendered (-) c706. Prompt payment discounts (-) c708. Sales returns and similar transactions (-) c709. Volume discounts
(+) Other management income	Corpora-te Tax	(+) IS_266 Accessory incomes and other management income	(+) c75 Other management income
(-) Purchases of goods for resale	EEC	(-) IS_760 Net purchase of goods for resale	(-) c600. Goods for resale purchased (+) c6060. Prompt payment discounts on goods for resale purchased (+) c6080. Returns of goods for resale purchased (+) c6090. Volume discounts on goods for resale purchased

INTERMEDIATE CONSUMPTION (P2)	SOURCE	Variables of the questionnaire	Relationship with the General Accounting Plan
(+) Purchases of raw materials and other supplies	Corpora-te Tax	(+) IS_762 Purchases of raw materials and other supplies	(+) c601. Raw materials purchased (+) c602. Other supplies purchased (-) c6061. Prompt payment discounts on raw materials purchased (-) c6062. Prompt payment discounts on other supplies purchased (-) c6081. Returns of raw materials purchased (-) c6082. Returns of other supplies purchased (-) c6091. Volume discounts on raw materials purchased (+) c6092. Volume discounts on other supplies purchased
(+) Work performed by other companies	Corpora-te Tax	(+) IS_263 Work performed by other companies	(+) c607. Work performed by other companies
(+) External services (except insurance)	Corpora-te Tax	(+) IS_280 External services (-) R&D expenditure[1] (-) Insurance expenditure[1]	(+) c62 Total external services (-) c620. R&D (-) c625. Insurance premiums

1 Total external services includes R&D and insurance expenditure. The part of the external services that correspond to R&D and insurance expenditure is estimated through data from surveys and is subtracted from the total external services expenditure.

b) Personal Income Tax:

OUTPUT (P1)		SOURCE	Variables of the register
(+) Net turnover		Personal Income Tax	(+) IR_D_095 Operation income
(+)Other management income		Personal Income Tax	(+) IR_D_096 Other income

INTERMEDIATE CONSUMPTION (P2)	SOURCE	Variables of the register
(+) Purchases of raw materials and other supplies	Personal Income Tax	(+) IR_D_100 Operation consumption
(+) Work performed by other companies	Personal Income Tax	Estimated value[1]
(+) External services (except insurance)	Personal Income Tax	(+) IR_D_104 Rentals and royalties (+) IR_D_105 Repairs and maintenance (+) IR_D_106 Services from independent professionals (+) IR_D_107 Other external services

1 Work performed by other companies is estimated through the relationship between this variable and external services. This relationship is obtained from surveys.

– NACE codes 95 and 96:

For the calculation of production and intermediate consumption in terms of National Accounts, the EEE microdata are adjusted in order to avoid duplication of companies that were already accounted for in other industries of the sectors S.13 and S.15.

Within the EEE survey there is a series of annual modules that are fundamental to a deeper analysis of the industries covered. The EEE module constitutes the Statistic on Products in the Services Sector for industry (according to NACE codes) 95 within this activity. This module provides information in relation to the breakdown by products. The distribution by products affects to the core process of compilation and balancing and so to the aggregates.

3.25.1.2 Adjustments

a) Validation adjustments are applied:

In particular on repairs and maintenance expenditures, included in the intermediate consumption component "external services". Part of these expenditures is consider to be gross capital formation and not intermediate consumption.

b) Conceptual adjustments are also made to include in output:

The Estimate of output produced for own final use

The Changes in inventories of finished products and goods for resale

The Subsidies on products

And in intermediate consumption:

Adjustment for insurance (ESA insurance)

Changes in inventories of raw materials and other supplies

Allocation of FISIM

c) Exhaustiveness adjustments:

– Non-observed output (to estimate underground producer as N1 and misreporting as N6) and intermediate consumption (to estimate underground producer as N1) have been calculated.

– Also, consideration was given to the tips in these activities due to those payments are not included in the price and that are part of the output of the corresponding industry. Baseline information for this estimate comes from the microdata from the Household Budget Survey compiled by the INE: average expenditure per person of those who have declared having made an expenditure in hairdressing salons and personal aesthetics (COICOP function 12111) is extracted for the reference year. These people are classified by regular monthly net household income in eight income intervals ranging from @ 499 to @ 5 000. A scale of percentages of tips is established though assumptions depending on the intervals of family income mentioned above, in ascending order.

– The activity of prostitution is part of division 96 of NACE Rev.2. The gross value added is the output, or production generated by the resident prostitutes, less the intermediate consumption expenses incurred due to practicing their activity.

Prostitutes are mainly non-wage-earning workers. Therefore, the gross added value coincides with the Operating gross surplus/Mixed income.

3.25.2 NON-MARKET PRODUCERS (NPISH)

This section concentrates the activity of most of the units identified as non-profit institutions serving households (NPISH). In new Benchmark Revision 2024 the data are provided by Tax Office through the Corporate Tax and the calculation methodology is similar than described for market producers.

In the former Benchmark Revision 2019, the estimate of economic activity of non-profit institutions serving households was based on the individual accounts of a representative sample of units[32] identified as NPISH, grossed up to the total NPISH population by industry. The individual accounts are made up through the individual accounting information available for each component of the sample.

The total population of NPISH is delimitated in the Business Register (BRg) according to the following steps:

1) Units in the Business Register (BRg) not belonging to Financial Institution (S.12) and General Government (S.13) sectors with the following legal nature are identified:

- G: Associations
- R: Congregations and religious institutions
- Q: Public Institutions
- V: Other non-defined types

2) All sample units are part of the NPISH population.

3) Those units identified in 1) and 2) with less than 3 wage-earner and a turnover of less than 5000 euros are allocated in the Households sector.

4) An automatic allocation of costs is then made to the rest of units shortlisted in the previous step, based on annual ratios of average production costs (extracted from the Annual National Accounts) per employee and branch of activity for the economic aggregates of compensation of employees, intermediate consumption, consumption of fixed capital and other taxes on production.

The product of such average costs by the number of employees in each unit provides an estimate on total cost of production in each unit.

5) For each unit, for the reference year and the previous two, is computed the market/non-market test (the ratio between the sales and the costs calculated above), with sales being the turnover for each available unit in the BRg.

6) As general rule, it is assigned to S.15 sector every unit which is a non-market producer according to the test applied in step 5. Similarly, additional conditions are established for special cases in which the unit has been registered in the last two years and therefore the market/non-market test was not available for three years in a row.

In Benchmark Revision 2019 a sample of 242 units was used, over a population of 14.538: sampling weights are always yearly updated by taking into account the employment and turnover figures of the observed sample and NPISH population in the business register. It contains the most important ones from the economic point of view:

[32] 242 units: 25 from NACE 85, 75 from NACE 86+87+88, 20 from NACE 93 and 122 from NACE 94.

– All political parties with parliamentary representation at that time.

– Labor unions with the largest number of affiliates (Comisiones Obreras, Unión General de Trabajadores y la Central Sindical Independiente de Funcionarios).

– The Episcopal Conference, encompassing all of the units that are in the scope of the Catholic Church.

– Non-governmental organizations of greater significance economically, such as Cáritas, Manos Unidas, Cruz Roja Española, Asociación Española Contra el Cáncer y Ayuda en Acción.

The economic activity of NPISHs was encompassed in four areas: education, health and social services (basically, religious organizations, charities and charity), arts, cultural and entertainment activities (basically, social, cultural and sporting non-profit clubs) associative activities (trade unions, professional or scientific associations, consumer associations, political parties and other non-profit organizations that do not fall in the above branches).

3.25.2.1 Output from non-profit institutions serving households

The estimated output for non-market private producers of this industry is obtained by aggregation of the expenses from these that correspond to each of its components.

The distribution of the production of this industry by product has been carried out using the NACE code of the units that form this sector in the BRg as indicator. That is, a percentage structure of the secondary activities of this branch is obtained from the direct correspondence between NACE activity codes and product CPA codes for all those units that are not part of the education, health care and social services or recreational activities branches.

3.25.2.2 Intermediate consumption of non-profit institutions serving households

The estimate of intermediate consumption of non-market units under private control in this industry is performed according to the method described before.

Intermediate consumption of insurance services and pension plans institutions pertaining to the non-profit sector are determined by applying the same weight thereof in total intermediate consumption of these units in the Supply and Use Table of former accounting bases. The distribution of the remaining intermediate consumption of products is carried out applying the percentage breakdown (by product) of intermediate consumption of the non-market public units of this industry.

3.26 Activities of households as employers; undifferentiated goods-and services- producing activities of households for own use (NACE Rev. 2 Section T)

It is considered that all households producing goods and services for their own subsistence undertake such activity in a secondary capacity to a principal identifiable activity. Consequently, this section only concerns those households employing domestic staff (NACE Rev.2 Division 97).

In accordance with SEC 2010, the production of services by households in employing domestic staff is valued as the remuneration paid to the domestic employee. In addition, intermediate consumptions is assumed null. Thus, the production and value added of this activity coincide with the compensation of employees (the operating surplus is null).

Wages and salaries of these workers are estimated through the product of the employment figures from LFS and Social Security by their annual gross wages for each type of working time. Gross annual salaries come also from the LFS, which estimates the annual gross salary per employee based on data from tax agencies and Social Security contribution bases (they extra payments, wages in kind, contributions to the social security of the worker and other salary supplements).

Besides, Social Security contributions of the employers are estimated according to the legal rates stablished for each scheme, under the hypothesis that both employees and self-employed workers work full-time.

Finally, an adjustment for not observed remuneration in kind for the case of full-time workers is established, based on estimates made of not observed remuneration in kind for NACE Rev 2 Division 91.

3.27 Activities of extraterritorial organizations and bodies (NACE Rev.2 Section U)

Not relevant.

3.28 Taxes on products, including VAT

VAT and domestic taxes on products, excluding VAT and taxes on imports and imports duties figures are part of the results of the General Government Accounts, prepared by the Audit Office.

Tax on imports and excise duties, excluding VAT, figures are provided by the Spanish Treasury, based on financial flows with the European Union, except taxes on imports in Canary Islands, Ceuta y Melilla that are part of the results of the General Government Accounts, prepared by the Audit Office.

Tax on products, excluding VAT and taxes on imports, figures are part of the results of the General Government Accounts, prepared by the Audit Office, except sugar and isoglucose levies that are provided by the Spanish Treasure.

3.28.1 VALUE ADDED TYPE TAXES (VAT)

In Spain there are two taxes classified under this category, the value added tax (VAT) applied in the Peninsula and the Balearic Islands and the IGIC (IGIC) whose spatial scope are the Canary Islands. The second, however, has a marginal weight in the context of the Spanish economy.

The treatment given to both taxes is similar, considering in each case the tax rates and spatial scope. For simplicity, hereinafter the term VAT will be used in reference to the two taxes.

It is, in both cases, an indirect tax on purchases of goods and services is supported by final consumers and industries identified as not exempt.

VAT (D.211) data are compiled from cash receipts, applying a time-adjustment to approximate an accrual time of recording. This time-adjustment consist of recording as accrued VAT of the year t the amounts that according to the tax management procedures are received in cash in January-February of the year t+ 1. No adjustment for non-collected VAT is made and repayments of VAT to non-taxable persons and to taxable persons for their exempt activities do not exist in Spain.

For the balance of *Supply and Use Tables* at basic prices it is necessary to eliminate all taxes on products of each of the components of demand, valued at market prices. In the present case, we need to determine exactly, in the use table at market prices, the products including VAT. This analysis is done from this tax legislation and its amendments each year, if any. In general, you can set:

– The VAT exempt branches, which due payments are not deductible, and that incorporate VAT in all its expenses (intermediate consumption and gross capital formation).

– VAT quotas of certain products which are not deductible for any economic operator.

– Existence of products exempted from VAT, both in intermediate and final demand.

For each of the three components (intermediate demand, final consumption expenditure and gross capital formation) products that include VAT are determined as follows:

1. *Intermediate consumptions:* VAT collected from acquisitions in exempt branches is estimated by applying the tax rates for each product, starting as a basis for calculating from a preliminary matrix of intermediate consumption of exempt branches prior to final equilibrium resources-uses in the *Supply and Use Table* of the reference year. Following corrections are added:

   – Exempt branches generally can deduct a portion of the VAT paid on their purchases, provided they have made supplies of goods or services which give rise to the right to deduct (*prorated rule*). To take this into account, as auxiliary information, figures from the Spanish Agency for Tax Administration (AEAT) on fees collected subject to non-deductible VAT, grouped by industry are also used. This information is used to calculate what percentage of intermediate consumption of exempt branches is deductible, excluding it from the calculation of the VAT collected in the same.

   – On the other hand, this same information is also used to estimate the VAT on those products subject to the not deductible tax occurring in other non-exempt branches of the economy, dividing this collected VAT on those products by nonexempt branch proportionally to intermediate consumption of the same.

   – Similarly, the information provided by the Audit Office about the economic activity of public enterprises and branch of activity where these are classified allows us to set a percentage of deductibility for intermediate consumption of non-market producers which are also excluded from the calculation of VAT levied on such intermediate consumption.

2. *Gross capital formation:* similar to the previous category, estimates of gross capital formation by assets, products and industries of the economy are available for the reference year and the percentage of deductibility estimated for intermediate consumption of each industry are used to determine the VAT collected on that gross fixed capital formation.

The tax rate applied on gross capital formation is the existing under the laws in force, according to the product.

3. *Final consumption expenditure:* the difference between the amount of VAT on products recorded in the *General Government Accounts* and VAT estimated according to the previous points on the intermediate demand and gross fixed capital formation is distributed in each product of *final consumption expenditure* of households and *social transfers in kind acquired on the market* by the *General Government*, taking into account the tax rates prevailing in each case according to the purpose of consumption COICOP and product.

In some cases, the same product may include several by-products with different VAT rates. In that case, an estimated VAT weighted average rate of the product is applied, derived from calculations of the weighted average rate of VAT to determine the contribution of Spain to the third EU own resource.

3.28.2 TAXES AND DUTIES ON IMPORTS EXCLUDING VAT

These comprise compulsory payments, excluding VAT, levied by the general government sector and the institutions of the European Union on imported goods in order to admit them to free circulation in Spanish economic territory.

In addition to Customs' tariff duties and other excise duties on imports, which are collected on behalf of the institutions of the European Union, this section includes mainly the excise taxes on imported goods in the Canary Islands, Ceuta and Melilla.

Tax on imports and excise duties, excluding VAT, figures are provided by the Spanish Treasury, based on financial flows with the European Union, except taxes on imports in Canary Islands, Ceuta y Melilla that are part of the results of the *General Government Accounts*, prepared by the Audit Office.

Data come from the Spanish Public Treasury in a cash basis and are transformed into an accrual basis by delaying the data two months. Such two-month time lag corresponds to the gap between accrual register of operations (according to public accounting) and cash flow (Treasury information).

Regarding the distribution by product:

– Common Customs Tariff duties: the total levied under such taxation category is distributed proportionally to imports from third countries by geographical areas registered in the Statistics on Extra-EU Trade developed by the Department of Customs and Excise of the Spanish Tax Agency. To do this, use is made of the available correspondence between the Combined Nomenclature of the customs data and the Classification of Products by Activities from the National Accounts.

The distribution by branch of activity is performed in proportion to the estimates of the preliminary estimates of the use table of the reference year (before the final resource-use balancing of the available national economy).

– In the case of Tax on Imports and Deliveries of Goods in the Canary Islands and Taxes on Production, Services and Imports in Ceuta and Melilla a similar procedure is followed.

– Excise duties on certain imported products: the Department of Customs and Excise of the Spanish Tax Agency provides the amounts levied by product (tobacco, transportation, alcohol, beer, intermediate products, oil and electricity). Their

distribution by branch of activity is carried out using the same estimated percentage structure for the distribution of excise duty on domestic products of the same type

3.28.3 TAXES ON PRODUCTS, EXCLUDING VAT AND TAXES ON IMPORTS AND EXPORTS

These include other taxes on goods and services levied on the production, export, sale, transfer, leasing or delivery of those goods and services, or their use for own final consumption or for own-account gross capital formation.

Imposed by the General Government sector, the leading taxation categories included in this transaction are taxes on hydrocarbons and on tobacco products, excise duty on electricity bills and on production value of electricity and taxes on gambling or on insurance premiums. The tax on transfers of assets and documented legal acts, also significant, contains a number of applicable levies on certain asset transfers or assignments and certain legal transactions or formal acts.

They all are compiled from cash receipts due to the accrual-cash adjustment in these taxes is not significant and would require a lot of information to be handled. Therefore, the cash-accrual adjustment has been limited to the three main taxes in Spanish territory: Value Added Tax (VAT), Tax on Personal Income (IRPF) and Corporate Income Tax (IS).

In addition, taxes on products (excluding VAT and taxes on imports) that are imposed by the institutions of the European Union relate to levies and duties on sugar and isoglucose in the reference year are also included. Data come from the Spanish Public Treasury in a cash basis and are transformed into an accrual basis by delaying the data two months. Such two-month time lag corresponds to the gap between accrual register of operations (according to public accounting) and cash flow (Treasury information).

Regarding the allocation use components and distribution by product:

– Excise duties on alcohol and alcoholic beverages, on hydrocarbons, on tobacco products and on electricity: the total levied by taxation category is distributed by use in proportion to the amounts resulting from applying the rate applicable to the preliminary estimate (prior to the final resource-use balancing) available in the use table for the reference year. In the case of excise duties on hydrocarbons, use is made of ad hoc assumptions about the distribution of different types of oil by use.

– As for the tax on registration of certain means of transport, the total levied between products is distributed based on registration data by type of vehicle held by the Directorate General of Traffic of the Ministry of Interior; thus, collections from acquisitions of motor vehicles are distributed by use (household final consumption expenditure and gross fixed capital formation of companies) assuming the percentage of the value of purchases of new vehicles made by households and companies, while the collection relating to other products is allocated to household final consumption expenditure.

– Tax on transfers of assets and documented legal acts, which are levied on onerous asset transfers, corporate transactions and documented legal acts (notarial, commercial, administrative and judicial documents), and allocated to the product *legal and accounting services* (CPA 69-70).

This is an ad valorem tax with different rates depending on the asset transfer to be performed, corporate operation, etc., and on certain occasions by fixed fee with levies applicable on certain asset transfers or disposals, certain legal transactions or formal acts, etc. Thus, the allocation of the proceeds of this tax depending on use is carried out based on the asset transfer taxed. This involves the use of the Real Estate Registration Statistics

of the Association of Registrars of Spain, dividing the total proceeds among each of the following uses in proportion to the results provided by these statistics:

The proceeds from the tax due on asset transfers of moveable property (change of ownership of vehicles) principally corresponds to household final consumption expenditure, as does the constitution of mortgage loans on used properties.

The proceeds from the real estate transfer tax corresponds to gross fixed capital formation, as do the public deeds of the final owners.

Finally, tax proceeds due to corporate transactions (incorporations, capital increases and reductions, etc.) correspond to intermediate demand, as does as the constitution of mortgage loans on commercial premises, plants, land and new properties related to construction activity. Subsequent distribution by branch of activity is performed proportionally to the intermediate consumption of the product legal and accounting services (CPA 69-70) from the Supply and Use Table for the reference year in the final input-output balancing.

- Taxes and Surcharges on Betting and Gambling:

This item covers taxes on gambling (casinos, bingo halls and gaming machines). Its amount is obviously allocated to household final consumption expenditure on the product *gambling* (CPA 92).

- Tax on insurance premiums:

This is an indirect tax levied on insurance and capitalization transactions. The taxable event is the execution of insurance and capitalization transactions based on actuarial techniques that are deemed to be within the scope of application of the tax, arranged by insurance entities operating in Spain, including those with freedom to provide services.

The taxpayer is the insurance company when conducting the taxable transactions, while the tax base is constituted by the total amount of the premium or fee paid by the policyholder or a third party. The amount payable will be the result of applying the tax rate to the tax base, which is generally 6%. This tax is fully passed on by the insurance companies to the entities or persons taking out the taxable insurance policies and accrues at the time when the premiums on taxable transactions are paid.

The allocation of this tax on use is then carried out by applying the tax rate of 6% to the estimated amounts of premiums of each branch of activity and of households, except in the branches exempted by law. Such premiums are estimated from the information provided by the Directorate General of Insurance and Pension Funds of the Ministry of Economy, Trade and Business on the premiums charged by the branches of the insurance sector (accidents, health care, legal defence, etc.) in the reference year.

- Tax on building, equipment and works:

This is a local tax, in which the taxable event is the execution of any construction, installation or work which requires obtainment of the corresponding building or planning permit. The tax rate, which is variable, is a certain percentage of the actual and effective cost of the construction, installation or work.

The proceeds of this tax are understood to be obtained on the gross capital formation of the product construction of *residential and non-residential buildings* (CPA 41).

3.29 Subsidies on products

Subsidies on products are current unrequited payments that general government or the institutions of the European Union make to resident products, with the main objective of influencing the price of products by a payment per unit of good or service produced.

The numbers of grants are included in the General Government Accounts, compiled by the Audit Office. These figures correspond to payment obligations recognized by these administrations, ensuring the compliance with the accrual principle.

On the other hand, it is noteworthy that there are no significant borderline cases between classifying a collectible figure like subsidy on products (D.31) or as social transfer (D.63).

Related to treatment of car scrap schemes, before 2009 they were put into practice through a deduction in the car registration tax, so they did not consist of direct grants to purchasers. Following the rules given under ESA2010 about the registration of tax credits, these deductions have been registered as the corresponding reduction in total revenue of this tax. After 2009, the payments under the conditional schemes that were associated with an obligation to purchase a new car were re-classify as subsidies on products D.31, which is in accordance with the recommendation agreed on in the GNI Committee (GNIC/232).

For grants awarded by Institutions of the European Union, the source for the estimates of subsidies from the EU institutions is the Spanish Agricultural Guarantee Fund (FEGA), a body attached to the Ministry of Agriculture, Fisheries and Food, who's main task is to distribute the subsidies provided under the Common Agricultural Policy (CAP) and ensure the objectives of this policy are applied correctly and there is a homogeneous implementation of CAP support throughout the country. FEGA acts as the coordinating body for all payments from the EAGGF (European Agricultural Guarantee and Guidance Fund) in Spain.

The FEGA provides interim payments made to beneficiaries of aid, ensuring compliance with the accrual principle. The allocation of each these individual EU subsidies was done by the start of the year 2000 (base 2000) in accordance with Economic Accounts for Agriculture: Methodology – Grants to agriculture and their classification in the EAA[33] which sets out the budget codes for subsidies to agriculture and the codes used in the European System of Accounts (ESA). These codes, the concept of aid and the underlying legislation to this concept allow, firstly, to classify payments as subsidies to the product, production subsidies, current transfers and capital, and secondly, to assign each grant to a particular product. Since then, an individual investigation of each new grant received is carried out.

[33] Economic Accounts for Agriculture:
https://www.mapa.gob.es/es/estadistica/temas/estadisticas-agrarias/cuentaseconomicasdelaagriculturametodologia_tcm30-122221.pdf

Chapter 4

The income approach

4 The income approach

4.0 GDP according to the income approach

GDP viewed from the income approach reflects the primary income distributed by the resident units of production. That is to say, it is the sum of the compensation of employees, taxes on production and imports less subsidies, gross operating surplus, and mixed income of the total economy.

As it happened regarding the output approach, for certain institutional sectors or subsectors, such as those made up of financial institutions (S.121, S.122, S.123, S.124, S.125, part of S.126, S.128 and S.129), information is available from the supervisory bodies that control them. Additionally, S.13 compensation of employees is available, from the Public Sector Accounts prepared by the Audit Office using the budgetary liquidations of the different units within the sector.

Finally, in the case of households employing domestic staff, the estimation of the output (see Chapter 3) that corresponds to the compensation of employees was made from specific sources and procedures.

For other industries, statistics include data on staff costs, differentiating between the different components, in accordance with the General Accounting Plan.

On the other hand, the INE also conducts surveys on costs incurred by the employer for the use of labour input and on average earnings per worker and average number of hours worked for different sectors of the economy. This is the case of the Annual Labour Cost Survey and the Quarterly Labour Cost Survey.

Regarding taxes and subsidies on production, administrative data (from IGAE, Treasury, etc.) are used. Gross operating surplus is obtained as a balancing item, given that in the compilation procedure the main approaches to GDP are the output and demand one.

Regarding institutional agreements, workings groups have been set up with the main data providers both outside (the Audit Office, the Bank of Spain,.).and inside INE (Register Unit, Collection Unit, Business Statistics Unit,.).These groups have regular meetings during the course of the year with the objective of identifying any potential risk in the main data sources and if this happens, finding ways to avoid or minimize their impacts.

Information exchanges between national accounts units and units supplying basic statistical data are carried out on the basis of written requests issued by the National Accounts Department to the corresponding unit (outside or within INE). Characteristics of the required information, deadlines and any other relevant specifications are outlined in the written requests.

4.1 The reference framework

The different statistical sources used in estimating the components of GDP, in the income approach, are described in detail below.

Compensation of employees

In general, all of the economic statistics include data about personnel expenditures, differentiated among their different components, in accordance with the General Chart of Accounts.

Additionally, the INE conducts specific surveys on costs incurred by the employer for the use of labour and on average earnings per worker and average number of hours worked, for the different sectors of the economy. This information is gathered in the Annual Survey of the Cost of Labour and the Quarterly Survey of the Cost of Labour.

For those sectors with complete accounting, such as certain financial institutions information from the supervisory bodies that monitor them is available. The budgetary liquidations of the various units comprising general government are also available.

Finally, in the case of households that employ domestic personnel, the estimate of output (see Chapter 3) that corresponds to the compensation of the employees, has been made using specific procedures.

Gross operating surplus and gross mixed income

These aggregates are implicitly included in all of the economic statistics, given that the above mentioned information gathered about every operation that has an impact on the calculation of them (compensation of employees, taxes, subsidies, intermediate consumption and output).

The distinction between operating surplus and mixed income is determined by the legal status of the business, since, as has already been mentioned, DIRCE, the framework used to conduct the surveys distinguishes between businesses having legal personality (corporations) and those belonging to natural persons.

In non-market activities, gross operating surplus is identical to consumption of fixed capital (see Chapter 4).

Finally, in the case of the own-account production of housing services by owner-occupiers, the surplus is obtained by means of a specific study carried out on this activity (see Chapter 5).

Taxes on production and imports

The institutions used as sources for estimating the taxes collected by all general government were the Audit Office (IGAE) and the Treasury.

Subsidies

In addition to the sources cited for the estimate of taxes, the Spanish Agricultural Guarantee Fund (FEGA), which is under the Ministry of Agriculture, Fisheries and Food, provides information on subsidies from the European Union.

4.2 Borderline cases

Reference to these cases have been already made in chapter 3.

4.3 Valuation

The sources of information available for the estimate of GDP from the income approach generally use valuation criteria similar to those established in ESA2010. However, it may be noted that in some specific cases (remuneration in kind, certain taxes, and insurance transactions) some adjustments are needed for their correct recording in national accounts terms.

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

The statistical information available for estimating GDP from an income approach comes from business economic statistics as well as fiscal sources.

In both cases, the questionnaires are matched to the General Chart of Accounts; therefore in this aspect the information is homogenous.

In the specific case of compensation of employees, the starting point is personnel expenditures and its components in terms of company accounts. Subsequently, the necessary methodological adjustments of these operations are made in order to obtain compensation of employees in accordance with the ESA2010 definition (see Chapter 4).

However, business economic statistics do not just record the total taxes paid by these units, but also gather the details of the principal taxation headings, which makes it possible to carry out the corresponding cross-checks and methodological adjustments.

With respect to operating surplus and mixed income, although it appears implicitly in the statistics, it is generally obtained as a balance, incorporating all of the adjustments made in the transactions that are included in the production and generation of income accounts.

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

4.5.1 THE ROLES OF DIRECT AND INDIRECT ESTIMATION METHODS

For the final reference year the estimates of the components of GDP from the income approach are principally based on surveys and administrative records. However, it may be noted that the consumption of fixed capital of non-market units is estimated from the stock calculated by the Perpetual Inventory Method.

The following table summarises the methods used for the transactions and balancing items.

Transactions and balancing items	Estimating methods
Compensation of employees	Based on: - Surveys - Administrative data
Gross operating surplus and Gross mixed income	- Surveys - Models
Taxes on production and imports	- Administrative data
Subsidies	- Administrative data

4.5.2 THE ROLES OF BENCHMARKS AND EXTRAPOLATIONS

The reference made in chapter 3 is also valid for the income approach.

4.6 The main approaches taken with respect to exhaustiveness

The estimates of the definite year in the National Accounts of Spain are based on the compilation of an input/output system (supply and use tables), thus simultaneously on the completion and balancing of the different approaches of supply, demand, and income.

As with the other approaches to estimating GDP, the National Accounts of Spain follow the guidelines set down in the European context with a view to achieving the greatest possible coverage and exhaustiveness in the figures for the components of income.

The work procedures used to assure exhaustiveness, impacting the components of GDP from the income approach, are the following:

Use of the employment variable in the estimates for the National Accounts of Spain

The distinction among employees' and self-employees' jobs for observed and non-observed economy in the market industries allows us to make separate estimates of compensation of employees for both groups.

Thus, compensation of employees has been calculated as a sum of estimates for both groups (observed and non-observed).

Regarding observed economy compensation of employee's estimates, wages and salaries and employers' social contributions are added.

For the estimation of the compensation of employees for the non-observed employment, it has been assumed that the average wages and salaries of the observed employment by industries could be used as a proxy of the average wages and salaries for the non-observed employment, but not the employers' social contributions, which have been assumed to be zero.

Inclusion of an estimate of tips in those activities where this type of reward is usual

This estimate entails an increase in output, which is distributed between compensation of employees and mixed income according to the type of employment.

Wages and salaries in kind of those goods and services provided free of charge or at reduced prices by employers and that are not recorded in the surveys as personnel expenditures

Surveys carried out by the INE gather information about wages and salaries in kind, therefore, it would only be necessary to make an adjustment for those activities that have not been covered by the statistical source used (in the expenditure side, the *Household*

Budget Survey, which is the primary source in the *household final consumption estimates*, covers the value of all goods and services provided to households as remuneration in kind by their employers). For that reason, the activities that have been analysed are those where payment in kind can be more significant. This adjustment is assigned in its entirety to the compensation of employees.

Taxes recorded according to the accrual principle

The detailed fiscal information, especially on the other taxes on products, makes it possible to cross-check the exhaustiveness of the demand estimates for certain products and their intended uses.

4.7 Compensation of employees

4.7.1 INTRODUCTION: STATISTICAL SOURCES

The estimate of the compensation of employees in the framework of the National Accounts is conducted with the same disaggregation by industry (see Chapter 3), as is used for estimating output and intermediate consumption, which are specified in accordance with NACE rev.2.

The principal statistical sources used in the estimating process were as follows:

A) General sources:

– Structural Business Statistics (SBS)

• *Annual Survey of the Cost of Labour*

– Quarterly Survey of the Cost of Labour (ETCL)

• *Tax sources*: the following specific taxes were used: Corporation Tax (tax levied on corporations and other legal entities that provides components of expenditures in accordance with the General Chart of Accounts) and the Annual Declaration of Withholdings on Income from Personal Work (DART) (an obligatory declaration by every entity that makes payments for salaries, pensions and professional services).

B) Sources for specific industries:

All statistics are included here that have accounting information on personnel expenditures incurred by companies in any specific industry. These statistics have been analysed in Chapter 3 in the sections corresponding to each economic activity.

In the case of the activities of *households as employers of domestic personnel* (97, NACE 2009) use is made of the *Labour Force Survey* and administrative register data included in Social Security reports.

4.7.2 ESTIMATING METHODOLOGY

The calculation is based on the compensation of employees obtained from the same statistical sources used from the production approach. Separate calculation of wages and salaries (D.11) and employers' social contributions have been obtained.

In case of market industries (except for *financial and insurance activities,* section K of NACE 2009 and the activities of *households as employers of domestic personnel,* 97 of NACE 2009), wages and salaries estimates have been calculated multiplying averages wages and salaries per industry (102 industries) by the total number of jobs by industry.

Regarding employers' social contributions:

– Actual social contributions figures come from the General Government Accounts, developed by the Audit Office, S.129 Pension Funds and S.122 Deposits Taking Corporation, except Central Bank accounts.

– Imputed social contributions figures come from: the General Government Accounts, developed by the Audit Office; the S.12 Financial Corporations accounts; and S.11 Non-financial Corporations, S.14 Households and S.15 NPISH accounts.

In addition, estimates have been obtained using the SUTs taking into account not only a breakdown by industry but also by institutional sector by each industry. Thus, GDP income approach is available by industry and institutional sector together, and so are Gross Operating Surplus and Mixed Income estimates, obtained as balancing items.

To this overall calculation should be added various adjustments to certain industries due mainly to tips (which are added in D.11) in the industries of other land passenger transport (taxis), accommodation, food and beverage services and other personal activities (hairdressers and beauty salons). In addition, in the field of Post and Courier activities are included in D.12 social contributions paid directly by the Public Administration personnel who belonged to S.13 and currently is in the S.11.

In general, the information used to calculate the total remuneration (as a first step to get the average remuneration) from structural surveys of businesses and their correspondence with the General Accounting Plan is as follows:

Personnel expenditure	General Chart of Accounts
D11=Wages and salaries	c.640
+ equity instruments	c.645
D.12= Indemnities+ Social security paid by the company+	c.642
Other social expenditures	c.643+c.644+c.649

The description of each of the above items is as follows:

Wages and salaries: Total amount of sums paid by the company, in cash or in kind, to its salaried staff, remuneration for the work carried out by them. It corresponds to the gross amount, i.e., before the deductions corresponding to social security and income tax of physical workers by people. Accounting Correspondence: c.640

Indemnification: Payments are made directly by the company to its employees in case of illness, unemployment, dismissal, accident, pension, early retirement... Accounting Correspondence: c.641.

Social security paid by the company: Amount corresponding to contributions to the Social Security bodies, made by the company, i.e., shares that company pays to the Social Security for the various services it performs (old age, disability, sickness, maternity, employment injury, occupational diseases, unemployment and family allowances). Accounting Correspondence: c.642.

Staff remuneration through equity instruments: Amounts cleared by the company with equity instruments, that is, stocks, shares, etc., or amounts based on the value of equity instruments in exchange for services rendered by employees. Accounting Correspondence: c.645

Other staff costs: Are all staff costs accounted for as such by the company and not included in the above accounts, such as long-term benefits through contribution schemes or defined benefit (contributions to pension plans, retirement benefits or retirement ...) and other social spending. This last item includes expenses of social nature performed in compliance with law or voluntarily by the company, such as subsidies and canteens, maintenance of schools and institutions of vocational training, scholarships for studies, premiums for life insurance, accident. No running costs are included sustaining these benefits. Accounting Correspondence: c.643, c.644, c.649.

These breakdowns in each industry are adjusted to obtain the totals for D.12 obtained from the estimates for the total economy, with information collected by the IGAE and properly treated to comply with the definitions of ESA 2010.

4.8 Taxes on production and imports

Taxes on production and imports (D.2) are mandatory unrequited payments, in cash or in kind, which are levied by the *General Government*, or by the institutions of the European Union, in respect of the production and importation of goods and services, the employment of labour, the ownership or use of land, buildings or other assets used in production. Such taxes are payable irrespective of profits made.

They are divided into *taxes on products,* to be paid per unit produced or transacted of a given good or service, and *other taxes on production,* those paid by business as a result of their participation in production independently of the quantity or value of the goods and services produced or sold.

National Accounts figures integrate taxes on production and imports (D.2) recorded in the General Government Accounts, prepared by the Audit Office.

Taxes on production and imports are compiled from cash receipts, applying a time-adjustment to approximate an accrual time of recording. This time-adjustment consist of recording as accrued VAT, Corporations Income Tax and Personal Income Tax of the year t the amounts that according to the tax management procedures are received in cash in January-February of the year t + 1.

4.8.1 TAXES ON PRODUCTS (D.21)

Taxes on products are divided into three categories:

- Value added taxes (VAT) (D.211)

These are taxes on goods and services that business collect in stages and which ultimately fall in their entirety on the final purchasers.

In Spain, there are two taxes classified in this section, the Value Added Tax (VAT - IVA in Spanish), which is applied in the Peninsula and the Balearic Islands, and the General Indirect Canary tax, applied in the Canary Islands.

- Taxes and duties on imports (D.212)

These comprise the obligatory payments, other than VAT, collected by general government and the European Union Institutions on goods imported for the purpose of admitting them into free circulation in the economic territory of Spain.

In addition to the Customs' duties that is a resource of the European Union Institutions, this section principally covers the excise taxes on goods imported to the Canary Islands and to Ceuta and Melilla, and the special taxes on imports. Data come from the Spanish Treasury in a cash basis and are transformed into an accrual basis by delaying the data two months. Such two-month time lag corresponds to the gap between accrual register of operations (according to public accounting) and cash flow (Treasury information).

- Other taxes on products (D.214)

These comprise taxes on goods and services that are imposed on the production, export, sale, transfer, leasing or delivery of such goods and services, or their use for own final consumption or for formation of capital on own account.

Imposed by the *General Government* sector, the leading taxation categories included in this transaction are taxes on hydrocarbons and on tobacco products, excise duty on electricity bills and on production value of electricity and taxes on gambling or on insurance premiums. The tax on transfers of assets and documented legal acts, also significant, contains a number of applicable levies on certain asset transfers or assignments and certain legal transactions or formal acts.

Taxes on products (excluding VAT and taxes on imports) that are a resource of the European Union Institutions cover the charges and duties on sugar and isoglucose, as well as the withholdings applied by the Commission for exceeding the milk production quota. Data come from the Spanish Public Treasury in a cash basis and are transformed into an accrual basis by delaying the data two months. Such two-month time lag corresponds to the gap between accrual register of operations (according to public accounting) and cash flow (Treasury information).

4.8.2 OTHER TAXES ON PRODUCTION (D.29)

These comprise the taxes that businesses pay as a result of their participation in production, regardless of the quantity or value of the goods and services produced or sold.

For the classification of the existing taxes in the Spanish legislation into the different ESA2010 transactions a specific analysis has been carried out.

Particularly, taxes paid by enterprises which imply the verification of the adequacy or security of the installations, the reliability or security of the equipment used, the professional competence of the personnel or the quality or characteristics of the goods or services produced (by the General Government) have been considered as acquisitions of services, as the amounts charged are in proportion to the cost of the verifications made by the General Government.

Finally, the distribution of taxes on production by industry is carried out first, according to the type of tax figure as presented in the breakdown of revenue by type of tax of the General Government Accounts, considering that some of these are levied on the activity of certain industries (i.e: taxes on bank deposits, taxes on production and transport of energy); the remaining amount is broken down proportionally to the production of each industry.

The source of data for other taxes on production is the Audit Office, except for contributions to European funds destined to financial system which are provided by the Spanish Treasury.

4.9 Subsidies

Subsidies (D.3) are current unrequited payments that *General Government* or the European Union Institutions make to the resident producers, for the purpose of influencing their levels of production, their prices, or the return on factors of production.

Subsidies are divided into *subsidies on products*, paid per unit of a good or service produced or imported, and *other subsidies on production*, those that the resident units of production may receive as a result of their participation in production, other than subsidies on products.

In the case of subsidies granted by the *General Government*, the figures come from the *General Government Accounts*, which are prepared by the Audit Office.

Those subsidies to public companies intended to compensate for continued losses incurred in their productive activities are classified as subsidies on *products*, since the losses are due to the fact that they bill their products at prices lower than their average costs of production (cultural, transportation and mining businesses, Post Office, etc.). Within *other subsidies on production*, those known as employment promotion subsidies are particularly significant, consisting of employment subsidies for unemployed people above a certain age, the long-term unemployed, people who have never been a part of the labour market and the physically handicapped, as well as subsidies to the costs of training programmes. The rest of the subsidies, the figures for which are much less significant, are distributed among agricultural insurance, tax credits for R&D promotion and filmmaking, shipbuilding, Spanish grouping of insurers, research on the environment, energy and technology and bonuses for promoting prevention in employment.

The subsidies granted by the European Union Institutions comprise the flows from the European Agricultural Guarantee and Guidance Fund, Guarantee section (EAGGF-Guarantee Section), the flows from the European Social Fund received directly by the units of production, and other subsidies not classified under any Community fund, also received by the producer units. The information is obtained monthly from Treasury publications and from the Spanish Agrarian Guarantee Fund (FEGA).

The compensatory incentives for herbaceous crops, incentives to production, premiums for cattle, for sheep, and for goats, export rebates and all those subsidies in which the producers of agricultural products receive the difference between the average market prices and guaranteed prices are classified as *subsidies to products*. All of these subsidies come from the EAGGF-Guarantee section.

The rest of the flows from the EAGGF-Guarantee section that are not classified as capital transfers (incentives for withdrawal of land, incentives for agricultural production in less-favoured and/or mountainous areas, etc.), and the other flows previously mentioned are recorded as *other subsidies on production*.

The distribution of subsidies on production by industries is made according to the type of subsidy as shown below, except in the case of bonus to employment and formation courses, where *Annual Labour Cost Survey* data on spending on work training curses is used.

This is the direct allocation of subsidies on production to each industry:

- Hydrographic Confederations by canon of spills and other are allocated to industry Water capture, purification and distribution.
- Postal Service actual contributions are allocated to industry Postal activities.
- Interest offset from loans for shipbuilding are allocated to industry 'Other manufacturing industries'.
- Tax credits for R&D are allocated to industry Research and development.
- Grants to the National Fund for Scientific and Technical Research are allocated to industry Research and development.
- Improving the competitiveness and management of the agro-food sector are allocated to several food industries.
- Subsidies related to agricultural insurance are allocated to industry Agriculture, livestock, hunting *and services related to it.*

4.10 Gross operating surplus

The operating surplus corresponds to the income obtained by the units from the use of their own production assets. It is the *balancing item* of the generation of income account. This account analyses the extent to which the value added is able to cover the compensation of employees and the other taxes minus subsidies on production.

In the case of unincorporated enterprises in the households sector, the balancing item of the generation of income account implicitly contains an element that corresponds to remuneration for the work carried out by the owner or the members of his family, which cannot be differentiated from his profits as entrepreneur. In this situation, one speaks of *mixed income*.

In this section, the term *operating surplus* will be used in a broad sense, namely, as the balancing item of the generation of income account, regardless of whether the unit that generates it is classified in the non-financial corporations or the households sector.

In the National Accounts of Spain, the operating surplus is obtained in accordance with the guidelines of ESA2010, in other words as the balancing item of the generation of income account. However, the economic surveys provide information on all of the transactions that comprise the production and generation of income accounts, and in consequence, these surveys make it possible to obtain the value added and the operating surplus by implication.

In the process of estimating the different transactions in national accounts terms, various adjustments are made to the basic statistics, some to guarantee exhaustiveness and others of a methodological nature, and this affects all of the transactions included in the production and generation of income accounts of the different industries (or institutional sectors) and therefore the balancing items of those accounts.

These adjustments, although generally made from the production approach, do cause a direct and correlative increase in the operating surplus.

In general terms, the following may be noted:

Construction. The increase for the treatment of subcontracts causes an increase in the figures for the operating surplus.

Treatment of FISIM (Financial Intermediation Services Indirectly Measured). The assigning of the FISIM, to the different users, has entailed an increase in the value added that is recorded in the operating surplus.

– Treatment of insurance.

– Services. As the estimate of the transactions involved in the production account of specific services (trade, transportation, hotels and restaurants, etc.) guarantees the complete coverage of the activity, this has an impact on the calculation of the gross operation of the units classified in the service industries. It should be pointed out that, in the case of household sector as owner-occupiers this balancing item is included within the gross surplus. The estimate of the variables for this sector and of the corresponding surplus was carried out by a specific study which estimates the production of rental services, real and imputed, by the stratification method recommended by the European Commission.

Obviously, the procedure followed for the estimate of the (gross) operating surplus of the non-market units is different. In this case, the consumption of fixed capital, is equal to the non-market operating surplus.

4.11 Mixed income

Mixed income is the balancing item of the generation of income account of the unincorporated enterprises belonging to the households sector (except in the case of output for own account of rental services of housing occupied by households that are the owners thereof). It is called *Mixed Income* because in such units, the balancing item of the generation income account, contains a component corresponding to the remuneration for the work carried out by the owner or the member of his family that cannot be distinguished from his profits as a businessman.

To obtain this balance it is necessary to start from the value added generated by these businesses, deducting the employees' compensation and the other taxes minus the subsidies on production.

The distribution of the value added to the economy, and subsequently of the compensation of employees and the other net taxes on production, between unincorporated businesses belonging to the households sector and businesses belonging to other sectors, is performed through a detailed analysis of the industries.

This study is not needed for those industries in which there is an unambiguous correlation in both directions with institutional sectors or subsectors with complete accounts (general government and most industries for financial institutions). For the breakdown of the transactions involved in the production and generation of income accounts, use is made of SBS data on incorporated and unincorporated enterprises (in the case of most of market activities, except *Financial and insurance activities*), administrative (tax) registers (in case of *Education, Human health and social work activities* and *Activities of memberships of*

organizations) and agricultural statistics and LFS results (in case of *Agricultural, forestry and fishing,* section A of NACE 2019).

4.12 Consumption of fixed capital

The *consumption of fixed capital* is the amount of fixed assets consumed during the period considered, as a result of normal wear and tear and foreseeable obsolescence, including a provision for the loss of fixed assets as a result of insurable accidental damage. It must be calculated for all tangible fixed assets (except animals) and intangible fixed assets, such as expenditures on prospecting for oil and minerals, R&D and computer software, for major improvements to non-produced assets and for the expenditures associated with transfers of ownership of non-produced assets.

Consumption of fixed capital covers anticipated terminal costs, such as the decommissioning costs of nuclear power stations or oil rigs or the clean-up costs of landfill sites. Such terminal costs are recorded as consumption of fixed capital at the end of the service life, when the terminal costs are recorded as gross fixed capital formation.

The Permanent Inventory Method is applied to estimate stocks of fixed assets and consumption of fixed capital. Employs series of gross fixed capital formation by assets, industries and institutional sectors, valued at acquisition prices of the year of stock estimation. It requires the adoption of hypotheses about the average service life of the assets, the mortality or retirement function and its corresponding survival function which depends on withdrawals hypothesis around average service life, and the depreciation function.

The following service lives have been determined at the detailed working breakdown of assets, in accordance with the recommendations of Eurostat, the OECD and the practices of other countries. It is worth noting that, with occasion of the 2019 BR, balance sheets of non-financial fixed assets have been calculated, both for institutional sectors and for industries. So, such service lives (lifetime assumptions are checked in every benchmarking review) and the mortality/retirement functions have been revised and updated, in addition to a further breakdown in the asset information used for the CFC calculations. The update of the service lives in BR-2024 has taken into account the recommendations provided by *DMES Task Force on Fixed Assets and Estimation of Consumption of Fixed Capital Under ESA 2010.*

Fixed assets

		Average service life (years)
AN.11	**Fixed assets**	
AN.111	**Dwellings**	68
AN.112	**Other buildings and structures**	
AN.1121	Buildings other than dwellings	
	Warehouse and industrial buildings	28
	Other buildings	48
AN.1122	Other structures	54
AN.113	**Machinery and equipment**	
AN.1131	Transport equipment	
	Vehicles	10
	Ships	25
	Railways	25
	Aircraft	20
	Other	10
AN.1132	ICT equipment	
AN.11321	Computer hardware	6
AN.11322	Telecommunications equipment	5
AN.1139	Other machinery and equipment	
	Computer, electronic and optical products	10
	Electrical equipment	15
	Machinery and equipment n.e.c.	20
	Furniture	15
	Other manufactured goods	10
	Other	16
AN.114	**Weapons systems**	
	Armored vehicles and tanks	20
	Ships	25
	ICT equipment	10
	Aircraft	25
	Other weapons systems	15
AN.115	**Cultivated biological resources**	
AN.1151	Animal resources yielding repeat products	10
AN.1152	Tree, crop and plant resources yielding repeat products	15
AN.117	**Intellectual property products**	
AN.1171	Research and development	10
AN.1172	Mineral exploration and evaluation	30
AN.1173	Computer software and databases	5
AN.1174	Entertainment, literary or artistic originals	7

The retirement functions used in the National Accounts of Spain are truncated normal functions, where asset is withdrawn from 80% up to maximum service life located at 120% of its average service life.

Linear depreciation functions are used for all assets, except for the R&D and Computer software and databases assets, to which a geometric depreciation function is applied.

Gross fixed capital stock is defined as the value of assets in use at the balance sheet date, that is, the value of accumulated past investments, deducting only the accumulated withdrawals of assets that no longer have economic use. This measure of the capital stock assumes that the efficiency of the asset remains unchanged throughout its service life.

Net fixed capital stock is defined as the value, adjusted for depreciation, of the assets in use at the balance sheet date.

The calculation of gross and net stock of a fixed asset *i* with maximum service life *L*, respectively, is as follows:

$$GFCS_{i,t}^{t} = \sum_{j=0}^{L-1} GFCF_{i,t-j}^{t} * (1 - F_{i,j})$$

$$NFCS_{i,t}^{t} = \sum_{j=0}^{L-1} GFCF_{i,t-j}^{t} * (1 - F_{i,j}) * (1 - d_{i,j})$$

where

$GFCS_{i,t}^{t}$: Gross fixed capital stock at the end of year *t*.

$NFCS_{i,t}^{t}$: Net fixed capital stock at the end of year t.

$GFCF_{i,t-j}^{t}$: Gross fixed capital formation in year *t-j* at year *t* prices

j: Current age of the cohort of capital goods.

$1 - F_{i,j}$: Percentage of the cohort of capital goods dated t-j which is still in use in year *t* in accordance with a retirement function *F*.

$1 - d_{i,j}$: Percentage of the batch of t-j capital goods which is not yet depreciated in *t* in accordance with a depreciation function *d*.

Consumption of fixed capital is the amount of fixed capital used in the accounting period. It is calculated as follows:

$$CFC_{i,t}^{t-\frac{1}{2}} = \sum_{j=0}^{L-1} GFCF_{i,t-j-1}^{t-\frac{1}{2}} * \left[(1 - F_{i,j}) * \left(1 - d_{i,j}\right) - (1 - F_{i,j+1}) * (1 - d_{i,j+1})\right]$$

where

$CFC_{i,t}^{t-\frac{1}{2}}$: Consumption of fixed capital of year *t*.

$GFCF_{i,t-j-1}^{t-\frac{1}{2}}$: Gross fixed capital formation in year t-j-1 at mid-year t prices

$1 - F_{i,j+1}$: Percentage of the cohort of capital goods dated t-j+1 which is still in use in year *t* in accordance with a retirement function *F*.

$1 - d_{i,j+1}$: percentage of the batch of t-j+1 capital goods which is not yet depreciated in *t* in accordance with a depreciation function *d*.

Consumption of fixed capital is calculated by industry (A*64) and by the institutional sector for all sectors in economy (S.11, S.12, S.13, S.14 and S.15).

There are separate series for GFCF in S.13 and S.15 sectors including price indexes, so separate estimates of CFC and stocks between market and non-market sectors are carried out from the PIM. No distinction is made on average service lives, depreciation functions or mortality functions, and the breakdown of assets is the same as other sectors. However,

base information on AN.1122 and AN.1123 assets in a separate way for non-market producers is not available.

Related to this topic, Government GFCF in construction works is broke down into dwellings (AN.111), buildings other than dwellings (AN.1121), and other structures plus land improvements (AN.1122+AN.1123). Roads are not separated from other infrastructure assets, the AN.1122 asset is depreciated jointly -without separating by components- and with an average service life of 54 years.

Chapter 5

The expenditure approach

5 The expenditure approach

5.0 GDP according to the expenditure approach

GDP from the expenditure side is defined as the sum of the final uses of goods and services of resident institutional units (final consumption expenditure and gross formation of capital), plus exports and minus imports of goods and services.

Compilation of final consumption of household and NPISH and capital formation is made by INE whereas the estimates for consumption of General Government comes from IGAE data of General Government Accounts. BoP unit in Bank of Spain and INE work jointly to estimate aggregates of the Rest of the World (RoW) account, and so imports and exports of goods and services.

Information exchanges between national accounts units and units supplying basic statistical data are carried out on the basis of written requests issued by the National Accounts Department to the corresponding unit (outside or within INE). Characteristics of the required information, deadlines and any other relevant specifications are outlined in the written requests.

5.1 The reference framework

The estimates of the components of GDP in the expenditure approach come from a big number of different sources. The most relevant for each of the transactions involved are detailed in the following pages.

In addition to the sources cited here, other complementary sources have been used, and these are mentioned in each specific sections of this chapter.

- Household final consumption expenditure

Statistical operations compiled by the INE:

- *Household Budget Survey* (HBS), disseminated in an annual basis and based on the classification of final consumption expenditure of households for COICOP/HBS purposes.

  – *Statistics on Products in the Trade Sector* (EPSC). Survey of a structural nature, aimed at companies dedicated to activities related to sale, maintenance and repair of motor vehicles and motorcycles, the wholesale and retail activities, including retail fuel for motor vehicles and activities of intermediaries in trade. This statistic provides a detailed breakdown for each of the activities of the turnover by products sold and customer type.

  – *Population and Housing Census* and *Continuous Household Survey*.

  – *Passenger transport statistics.*

  – *Tourism statistics (*consumption by non-residents in Spain and consumption by residents in the rest of the world).

Statistics compiled by other institutions

- Business accounting of insurance companies provided by the insurance supervisor.
- Vehicle purchase statistics from the Directorate General of Traffic
- Annual Report of the General Directorate of Gambling Planning.
- Statistics from the Institute for the Elderly and Social Services
- Teaching statistics.
- Health statistics.
- Passenger transport statistics.

• Final consumption expenditure of the NPISHs

The estimate of economic activity of non-profit institutions serving households is based on information provided by Tax Office from the Corporate Tax and the individual accounts of a representative sample of units by NACE identified as NPISH, grossed up to the total NPISH population by industry. The individual accounts are made up through the individual accounting information available for each component of the sample. The total population of NPISH is delimitated in the Business Register (BRg), following the procedure described in chapter 3.

• Final consumption expenditure of the government sector

The estimation of the components of final consumption expenditure of the government sector comes from the General Government Accounts compiled by the Audit Office (IGAE).

The information sources used are budgetary settlements, with the highest level of disaggregation, and the Profit and Loss Accounts and balance sheets of those institutional units that become part of the General Government sector as other non-market producers.

• Gross fixed capital formation

The estimate of the value of Gross Fixed Capital Formation (GFCF) is made up of various assets, each estimated with a different method according to the available base data sources. This estimate is subject to the input-output equilibrium resulting from the preparation of annual Supply and Use Tables.

The main sources of information for the assets estimates are: surveys conducted by the Ministry of Agriculture, Fisheries and Food, the Industrial Products Survey and the Structural Business Statistics by INE, the Construction Industry Structure Survey by the Ministry of Transport and Sustainable Mobility, the Statistics on Products in the Services Sector for those products which can be included within the GFCF (software, originals, services linked to the transfer of ownership of capital goods) and the Statistics on Spanish Foreign Trade[34] drawn up by the Customs Department of the Spanish Tax Agency. It also includes sources for some sectors (or part thereof) that can be considered exhaustive: Financial institutions, public administrations.

Moreover, it should be noted that the set of sources used to estimate the different industries (economic statistics) collect information on investment expenditure, including a breakdown of products. This happens mainly with the three types of basic sources: the Construction Industry Structure Survey by the Ministry of Transport and Sustainable Mobility, the Structural Business Statistics and Annual Survey of Services by INE.

[34] See sections 5.15 and 5.16 for more information on this statistical source.

- Changes in inventories

The estimation of changes in inventories is calculated mainly from the information on this variable, divided into three categories: finished and work-in-progress goods, goods for resale and materials and other supplies, which are obtained from the Structural Business Survey for manufacturing, trade and services sectors conducted by INE, the Construction Industry Structure Survey by the Ministry of Transport and Sustainable Mobility, statistics by the Ministry of Agriculture, Fisheries and Food, statistics of the Corporation tax and the Personal income from the Spanish Tax Agency, data from Bank of Spain and data from the General Comptroller of the State Administration.

Change in inventories is estimated by industry. To transform the valuation of the inventories of the company accounting surveys into national accounting principles, correction factors are applied.

- Acquisitions, less disposals of valuables

This transaction has been estimated separately since the 2019 BR.

Considering the valuables definition in ESA 2010, a detailed review has been made of all products that can be valuable objects according to their CPAs and NACEs activities. A comprehensive review of sources covering both statistical sources and market studies has also been done.

The estimation method used has been the commodity flows, as it is the most comprehensive and appropriate given the sources of information available.

- Exports and imports of goods

The results of the Balance of Payments and de rest of the world accounts in the national accounts are fully integrated. In the case of exports and imports of goods, the primary source is the International Merchandise Trade Statistics (IMTS), prepared by the Customs and Excise Department of the Spanish Tax Agency.

- Exports and imports of services

In the case of exports and imports of services, the primary source of information is the Survey of International Trade in Services, compiled by the INE.

5.2 The borderline cases

5.2.1 THE BORDERLINE CASES FOR HFCE

Regarding social transfers in kind, those are purchases of goods and services performed by General Government and proportionated directly to beneficiary by market producers. Therefore, given that households are not in charge of making these payments, nor to be refunded, they are excluded from HFCE.

With regard to payments by households for licences, permits, etc., the production of CPA 84 - Public administration and defence services; compulsory social security services- in the Supply and Use Table consists of permits and licenses paid by users to General Government, either Central Government or State/Local Administrations. The breakdown of these payments is

provided by the Audit Office, such as payments for DNI issuance, exam fees, etc. They are distributed between intermediate demand and HFCE according to the kind of each fee, identifying this way what licenses and permits are considered purchases of services for the households.

In particular, the list of fees and taxes that are part of the final household consumption are listed below:

Waste collection tax (COICOP 4.4.2)

Sewage tax (COICOP 4.4.3)

Radio and television licences (COICOP 9.4.2)

Firearm licence (different of hunting) (COICOP 12.6.1)

Driving and pilot licence (COICOP 7.2.4)

Examination fees to obtain driving licence (COICOP 7.2.4)

Issue of duplicates (COICOP 12.6.1)

Payment for licence validation (COICOP 12.6.1)

Purchase of Parking Organisation and Regulation card, Resident parking card or payment in parking meters (COICOP 7.2.4)

Payment for street repairs (COICOP 4.4.4)

Payment for cemeteries and funeral services (COICOP 12.6.1)

Identification card issue fees (COICOP 12.6.1)

Identification card duplicate fees (COICOP 12.6.1)

Passport issue fees (COICOP 12.6.1)

Title issue fee (COICOP 12.6.1)

Payment for certified copies (COICOP 12.6.1)

Death and marriage certificates (COICOP 12.6.1)

Birth certificates (COICOP 12.6.1)

Court fees (COICOP 12.6.1)

5.2.2 THE BORDERLINE CASES FOR GFCF

- Military structures and equipment:

The Audit Office provides detailed information of chapter 6 of National Budget Law related to public investments, and particularly the armament budget program. This information is adjusted by the Audit Office in relation to budgeted expenditure and the time when the military asset is effectively delivered, as that is the moment of recording on National Accounts.

- Light weapons and armoured vehicles used by non-military units:

Light weapons and armoured vehicles are usually acquired by police and security force, and they are considered GFCF of market producers, as in the previous ESA95. These assets are not recorded in AN.114 military weapons systems but recorded as AN.113 - Machinery and equipment.

- The amount of car registration taxes as part of the taxes on products.

There are two types of car taxes in Spain:

– Car registration tax: this tax is not part of GFCF, because it is periodically paid (also known as car road tax). It is shown as D.29 (paid by companies) or as D.59 (paid by households).

– Duty on Specific Means of Transport: part of this tax is considered GFCF and the rest as HFCE, and it's also known as the car registration tax in another countries It is shown as D.214.

- R&D activities carried out by General Government:

They are assessed as sum of all costs, as described in chapter 3. In case of public universities and hospitals, Statistics on R&D activities (performed by INE) provide the information about costs required for R&D production. In case of public research organizations, the information of costs is provided by the Audit Office.

R&D production is differentiated from main activity as a secondary activity, not recorded as ancillary activity. Revenues from the sale of R&D by non-market producers of R&D are recorded as revenues from secondary market output. Also, all acquisitions of R&D by the government are recorded as GFCF, except purchases of R&D for non-market units whose main activity is the investigation and research (intermediate consumption).

- Service life estimates used in the calculations of R&D and depreciation function:

There is no survey information available, so single average service life of R&D in the CFC calculation method is 10 years. Geometric depreciation function is used as a reference method in the calculation of CFC of R&D.

- Software for own use:

It is calculated following the recommendations of the Eurostat 'Task Force on Software Measurement' of June 2002, that is, as sum of all costs (including consumption of fixed capital of the infrastructure and equipment required to produce software), except taxes on production, and disaggregated by COFOG groups, as described in chapter 5

The estimated value of software for own final use in the COFOG groups of R&D (from 1.4 to 10.8) is excluded from the value of the production for own final use of R & D initially estimated.

5.3 Valuation

In general, all the statistics used to estimate the components of demand value products at acquisition prices, the system established in ESA2010. However, it is important to note that in certain specific cases such as changes in inventories and imports of goods, as well as gross capital formation for own use, etc., the necessary adjustments are made for them to be correctly valued, in accordance with the methodology of ESA2010.

No adjustments are made to exports and imports due to validation of intra-group transactions within MNEs.

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

The greater part of the basic information used for estimating GDP in the expenditure approach comes from surveys drawn up by the INE, for which reason it is not necessary to make any matching between administrative or private accounting concepts and national accounts concepts, as the surveys of INE present the information in the terms of the latter.

In the case of exports and imports, the other conceptual adjustments refer to goods crossing the borders for being processed/repaired without change in its ownership.

Regarding R&D, no conceptual adjustment was considered because of the way of estimating the aggregates of this approach.

5.5 The roles of direct and indirect estimation methods and of benchmark and extrapolations

In the definitive reference years, the estimates of the transactions involved in GDP from a demand perspective are based, in general, on direct methods and methods subject to the resource-use balance of the Supply and Use Tables (SUTs).

Estimating methods

Transactions	Estimating Methods
	Based on:
Final consumption expenditure of households	-Surveys -Statistics -Administrative data
Final consumption expenditure of NPISH	-Administrative data -Surveys
Final consumption expenditure of general government	-Administrative data
Acquisitions less disposals of fixed assets	-Surveys -Statistics -Administrative data
Changes in inventories	-Surveys -Administrative data
Exports of goods	-Statistics -Administrative data
Exports of services	-Statistics -Administrative data
Imports of goods	-Statistics -Administrative data
Imports of services	-Statistics -Administrative data

In general terms, it can be said that the principal components of expenditure rely on specific sources for the reference year considered. For those years of the accounting series whose estimates are deemed as final estimates, the role of extrapolations is negligible.

5.6 The main approaches taken with respect to exhaustiveness

As in other approaches to estimating GDP, the National Accounts of Spain attempt to achieve the greatest coverage and exhaustiveness in the figures for the components of expenditure.

With respect to the final consumption expenditure of households, all of the procedures for estimating and combining statistical sources that give the greatest coverage of the accounting figures were followed. The following cases may be mentioned:

- Estimates based on alternative sources (supply sources, administrative records, etc.) for certain items which could be undervalued in the HBS, like tobacco, some alcoholic drinks, gambling, etc.

- Use of alternative sources (of supply), like the Retail Trade Survey, combined with HBS, in order to increase their robustness or to confirm the accuracy of the estimates based on HBS.

- Estimating the rents imputed to the owners of dwellings in accordance with the procedure of stratification recommended by the Regulation (EC) 1722-2005 related to the principles for the calculation of housing services.

- Estimating the services of private households with employed persons by means of specific sources.

- Introduction of adjustments to ensure the geographical and population coverage of the estimates. The population adjustments are of two types: conversion of the expenditure included in the HBS, aimed at resident households, therefore under a perspective in national terms, to domestic terms; and the inclusion of the expenditure made by collective households (old people's homes, monasteries, convents, etc.).

- The use of alternative sources to the HBS is justified also by conceptual reasons in various types of products: health services, gambling (the HBS records the value of the stake), treatment and valuation of insurance services consumption (the HBS records the value of the premium), FISIM, etc.

Regarding final consumption expenditure of general government, it is worth noting that - in addition to stressing the fact that the level of information available makes it possible to evaluate this sector as one of those with the greatest coverage in the entire accounting system- the specific recommendations made in the process of revising the GNP have also been applied.

Among other aspects, it is important to note:

– The coverage of the units included in this sector is complete for the principal subsectors (central government, state government, social security funds). Consequently, the estimates of the variables that factor in the expenditures are based on the data recorded directly in the accounts of the units that comprise the General Government sector.

– The delimitation of the General Government sector has been revised in detail to guarantee the inclusion of all those units that meet the criteria of the ESA 2010 and of the Manual on General Government Deficit and Debt.

– Specific estimates have been made of all those aspects that may influence the exhaustiveness of the measurements: social transfers in kind; distinction between intermediate consumption and gross fixed capital formation from military investment; consumption of fixed capital; income by market output and other non-market output, etc.

Regarding final consumption expenditure of NPISH, it is worth noting that is based on the information from Corporate Tax and individual accounts of a representative sample of units by NACE identified as NPISH, grossed up to the total NPISH population by industry. The individual accounts are made up through the individual accounting information available for each component of the sample. The total population of NPISH is delimitated in the Business Register (BRg), following the procedure described in section 3. This statistical procedure should guarantee a complete coverage of the economic activity of these non-market units.

Regarding gross fixed capital formation, it is worth noting that estimate based on different data sources, subject to the input-output equilibrium resulting from the preparation of annual Supply and Use Tables (SUTs), guarantee a high level of exhaustiveness in the calculations. Only an exhaustiveness adjustment is made for illegal activity (N2) in GFCF in asset AN.1139 related to the machinery used in the production of marijuana.

Regarding exports and imports, it is worth noting that the characteristics of the sources of information available to estimate appear to satisfy the requirements of *completeness* demanded. In particular case of imports and exports of goods, the data derived from VAT operations are used in order to effect increases (units beyond the declaration threshold and non-response).

5.7 Household final consumption expenditure (HFCE)

5.7.1 INTRODUCTION

Household final consumption expenditure is the expenditure made by resident households on goods and services used to directly satisfy individual needs. *Final consumption expenditure* may take place in Spanish economic territory or in the rest of the world. It therefore excludes the consumption expenditure of non-residents in Spanish economic territory.

It should be noted that, according to the ESA 2010, *household final consumption expenditure* includes:

– Rental services of owner-occupied dwellings.

– Income in kind, whether goods and services received by employees as income in kind, or goods and services produced by unincorporated companies of the *Households* sector that are retained for consumption by members of the household (e.g. agricultural and livestock products, catering services, rental services of owner-occupied dwellings and domestic services produced by paid domestic staff).

– Materials for small repairs and interior decoration of dwellings usually carried out by the tenants of the same.

– Materials for repairs to and maintenance of consumer durables.

– Consumer durables, including transfers of ownership of durables from a company to a household.

– Financial services and FISIMs used by households as final consumption.

– Insurance services and pension funds services.

– Payments by households on licences, permits, etc.

– Acquisitions at economically insignificant prices (for example, museum tickets or public university fees).

However, household final consumption expenditure (HFCE) does not include:

– Social transfers in kind (goods and services consumed by households but acquired or produced by the *General Government* or *Non-Profit Institutions Serving Households* sectors).

– Expenditure of households owning unincorporated companies incurred for business purposes (these are *intermediate consumption* or *gross fixed capital formation*).

– Expenditure that an owner-occupier incurs on the decoration, maintenance and repair of the dwelling not typically carried out by tenants (these are *intermediate consumption* in the output of rental services).

– Purchases of dwellings (these are *gross fixed capital formation*).

– Purchases of non-produced assets such as land.

– All payments by households that are to be considered as taxes.

– Subscriptions, fees and payments by households to NPISHs and voluntary transfers to charities and aid or assistance organisations.

An estimate of household consumption spending in Spanish economic territory, double broken down by consumption purpose using the classes of the COICOP (Classification of Individual Consumption by Purpose) and by product using the CPA (Classification of Products by Activities) is made.

In this regard, even though separate estimates are not available, the following borderline cases are included and the related COICOP classes are mentioned below:

a) Leasing:

Payments made to the lessor in an operational leasing are included in the following COICOP classes:

– Cleaning, repair and hire of clothing (03.1.4).

– Repairs of household electrical appliances (05.3.3).

– Great tools (05.5.1).

– Domestic and other household services (05.6.2).

– Paramedical services (06.2.3).

– Other services relating to personal vehicles (07.2.4).

– Telephone and fax services (08.3.0).

– Recreational and sporting services (09.4.1).

– Cultural services (09.4.2).

In case of financial leasing, the fee charged by the lessor and possible FISIM are registered as HFCE in COICOP 12.6.2 (*Other financial services*) and in 12.6.1 (FISIM), respectively. Separate estimates of HFCE related to operating and financial leasing are not available.

b) Materials for repairs and maintenance of durable consumer goods are included in HFCE in the following classes of COICOP:

– Large tools and equipment (05.5.1).

– Small tools and miscellaneous accessories (05.5.2).

– Non-durable household goods (05.6.1).

– Spare parts and accessories for personal transport equipment (07.2.1).

– Equipment for reception, recording and reproduction of sounds or images (09.1.1).

– Photographic and cinematographic equipment and optical instruments (09.1.2).

– Information processing equipment (09.1.3).

On the other hand, there is an estimate of the expenditure made in Spanish economic territory by households resident in the rest of the world (which is an *export* of services) and spending made in the rest of the world by households resident in Spanish territory (which is an *import* of services). The GDP component *household final consumption expenditure* (HFCE) comes from adding the total expenditure by households in Spanish economic territory to the spending in the rest of the world by households resident in Spanish territory and subtracting from it the expenditure incurred in the Spanish economic territory by households living in the rest of the world.

5.7.2 GENERAL PROCEDURE OF ESTIMATION

The estimation of *household final consumption expenditure (*HFCE) in the reference year is developed into three steps:

1. Preliminary estimate of household final consumption expenditure in Spanish economic territory (domestic final consumption of households) under a double classification: by consumption purposes according to the Classification of Individual Consumption by Purpose (COICOP) and by type of product according to the Classification of Products by Activities (CPA).

2. Final estimate of household final consumption expenditure in Spanish economic territory by COICOP purposes and types of products after the input-output balancing of the Supply-Use Table (or only by COICOP in case of reference years where results are provisional data).

3. The aggregate of HFCE as GDP component from the demand side is obtained by subtracting from HFCE in Spanish economic territory that of non-resident households (export of services) and adding the expenditure by households resident in Spain made outside Spanish economic territory (import of services).

The most widely used source in that estimation is the *Household Budget Survey* (HBS), developed by the INE, which provides consumption expenditure in households (private, not collective) resident in Spain (within or outside the country) broken down by consumption purposes according to their own COICOP/HBS classification, coherent with the COICOP classification of final consumption expenditure of households in national

accounts. However, the results provided by the survey were previously subject to a number of adjustments in order to adapt the concepts of HFCE in national accounts terms:

1. Time of recording: Temporary reassignment of the expenditure collected by the HBS in 2021 and 2022 to those of them that are effectively attributable to the year 2021. This temporary reassignment is made taking into account the retrospective reference period of the expenditure prior to the data collection time and under the hypothesis of uniform distribution of the expenditure along this reference period. The lengths of the reference period in the Spanish HBS depend on the COICOP/HBS classification by subclasses of the expenditure (biweekly, monthly, quarterly or annually).

2. Distribution of household expenditure classified as remittances to household members not residing in the dwelling in most of the COICOP/HBS classes, according to the percentage structure of each type of expenditure in the HBS.

3. Distribution of household expenditure classified as pocket money for children resident at home in some classes and subclasses of the COICOP/HBS, according to the percentage structure of each type of expenditure in the HBS.

4. Assignment of each type of expenditure collected in the HBS through the COICOP/HBS classification to the different types of products according to the CPA classification. This is made according to the products included in each item of the COICOP/HBS classification and, in a subsidiary manner if there is no additional information, taking advantage of the assumptions about the structures of expenditure purposes by type of product used in previous years.

5. Reclassification of some consumption expenditures included in COICOP/HBS classes to other classes of consumption according to the *Classification of Individual Consumption by Purpose*.

6. Estimated domestic household final consumption expenditure:

A breakdown is carried out by purpose (COICOP) and type of product (CPA) of the expenditure made outside Spanish economic territory by households resident in Spain and expenditure made in Spanish economic territory by households resident in the rest of the world, based on the results of the *Tourist Expenditure Survey* (EGATUR).

Estimates of households final consumption expenditure in the Spanish economic territory by purpose (COICOP) and type of product (CPA) comes from subtracting the estimate made on consumption expenditure by resident households outside the Spanish economic territory by purposes (COICOP) and product type (CPA) and adding the expenditure in the Spanish economic territory of households residing in the rest of the world also under the double classification by COICOP and CPA.

7. Addition of final consumption expenditure by persons living in collective dwellings.

To do this, an estimate was made of the number of residents in collective dwellings in each of the following types of collective dwellings: health institutions, nursing homes, institutions for the disabled and social assistance to children and youth, religious institutions, correctional institutions, military institutions and others through and extrapolation of the results of the *Census of Population and Housing* using the rate of change between the two dates for the total population (except for the case of the population in nursing homes that takes into account the rate of change in the population of 80 and over) according to the *Population Figures*, compiled by the INE.

The estimate of consumer spending by such households has been performed for each of the types considered in accordance with the following procedures:

– Correctional institutions, health institutions, institutions for the disabled and social assistance to children and youth, religious institutions and military institutions: the estimate has been prepared assuming the COICOP/HBS subclasses where residents in each of these types of establishments may have significant consumer spending and applying the average expenditure per person in these classes according to the HBS to the total population residing in these types of collective dwellings.

– Nursing homes: the estimate is made in a similar way to the previous case, while spending on social protection (group 12.4 of the COICOP) has been using information provided by the "Annual Report. The Elderly in Spain. Statistical Data from the State and the Autonomous Communities" published by the Institute for the Elderly and Social Services (IMSERSO) of the Ministry of Social Rights, Consumer Affairs and 2030 Agenda which provides the number of places in public, concerted and private nursing homes and the user economic contribution in each one of them (for private nursing homes, the report of www.inforesidencias.com [35]is used to determine the economic contribution of the user).

– Other (hotels, boarding houses, hostels and workers' residences): the estimation has been prepared using the average cost per person in each COICOP/HBS subclass according to the HBS to the total population residing in these types of collective dwellings, except for group 04.1, for which an estimate was used of the daily average price of accommodation in these establishments (obtained from the average daily price of accommodation in one star hotels as per the Profitability Indicators of the Hotel Sector (PIHS) published by the INE).

5.7.3 DETAILED CALCULATIONS BY COICOP

5.7.3.1 01 Food and non-alcoholic beverages

The preliminary estimate (before supply and use balancing) by product is basically based on the results of the HBS.

However, *Statistics on Products in the Trade Sector* (EPSC), prepared by the INE, has been used in the following CPA products of some COICOP classes:

– The group of Non-perennial crops (CPA 01.1); Perennial crops (CPA 01.2) and Planting material: live plants, bulbs, tubers and roots, cuttings and slips; mushroom spawn (CPA 01.3) in the COICOP class 01.1.1.

– Preserved meat and meat products (CPA 10.1) and Other food products (CPA 10.8) in the COICOP class 01.1.2.

– Other food products (CPA 10.8) in the COICOP class 01.1.4 .

– Preserved meat and meat products (CPA 10.1) and Vegetable and animal oils and fats (CPA 10.4) in the COICOP class 01.1.5.

– Other food products (CPA 10.8) in the COICOP class 01.1.7.

[35] https://www.inforesidencias.com/contenidos/noticias/nacional/el-precio-medio-de-una-residencia-geriatrica-en-espa-a-es-de-1829-81-mes

– The group of Non-perennial crops (CPA 01.1); Perennial crops (CPA 01.2) and Planting material: live plants, bulbs, tubers and roots, cuttings and slips; mushroom spawn (CPA 01.3) and the group of Other food products (CPA 10.8) in the COICOP class 01.1.9.

– Other food products (CPA 10.8) in the COICOP class 01.2.1.

– Soft drinks; mineral waters and other bottled waters (CPA 11.07) in the COICOP class 01.2.2.

EPSC provides the turnover of each branch of activity retail trade in each foodstuff classified in CPA codes and the percentage of the turnover of each branch of activity generated by purchases of final consumers.

In addition, the *Food Consumption Panel* (PCA), conducted by the Ministry of Agriculture, Fisheries and Food (MAPA), has been used for contrast purposes in some products and COICOP subclasses. This is an annual sample research on households and establishments of different nature to learn the direct demand for food and beverages within and outside households and analyse the main factors that characterise it, which provides total household expenditure on food and beverage products.

With respect to the base year 2021 onwards, extrapolation of the total expenditure in each class of the COICOP 01 is made according to the weighted average evolution of HBS, PCA and EPSC data (weights are set up according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the estimated distribution in the previous year and the supply and use balancing by products.

5.7.3.2 02 Alcoholic beverages, tobacco and narcotics

The preliminary estimate is based in mostly cases on sources other than the HBS.

02.1 Alcoholic beverages.

In the preliminary estimate three alternative sources have been considered:

– *Food Consumption Panel (PCA),* conducted by MAGRAMA, which provides total household expenditure on food and beverage products.

– *Statistics on Products in the Trade Sector* (EPSC), prepared by the INE, which provides the turnover of each branch of activity of retail trade in alcoholic beverages (CPA 11.01-11.06) as well as the percentage of the turnover of each branch of activity generated by the purchases of final consumers. An estimate is then made of the consumer spending on alcoholic beverages (COICOP 02.1) based on the sum, in all activities, of its turnover on sales of said product multiplied by the percentage of the turnover of the branch generated by the purchases of final consumers, adding the corresponding VAT and other indirect taxes on products. Finally, this figure is broken down into the classes 02.1.1 *Distilled beverages*, 02.1.2 *Wine* and 02.1.3 *Beer* according to the percentage expenditure structure provided by the HBS.

– Data published annually by the Department of Customs and Excise of the State Tax Administration Agency (AEAT) on the collection of excise duties on alcohol and alcoholic beverages, which provide an estimate of the physical quantities, in real volume, consumed in the output of these products in Spain. The estimate of HFCE in each of the classes considered is obtained by multiplying the estimated quantities consumed in Spain for each type of alcoholic beverage according to the above

publication by the estimated percentage corresponding to household consumption and the average prices considered for each.

With respect to the base year 2021 onwards, extrapolation of the total expenditure in each class of the COICOP 02.1 is made according to the weighted average of the evolution of HBS, PCA, EPSC and the product of a volume index derived from the amounts of each kind of alcohol and alcohol beverages sold (published by the Department of Customs and Excise of the Tax Agency) and a price index (CPI) in each COICOP class (weights are established according to the supply and use balancing).

02.2 Tobacco

Estimates are based on information published by the Commissioner of the Tobacco Market, complete with information provided by the Canary Tax Administration about collection of excise taxes on tobacco in Canary Islands and HBS in the case of consumption of cigarette papers.

The Commissioner for the Tobacco Market is an autonomous agency under the Ministry of Finance which exercises various powers of a regulatory and supervisory nature to safeguard the application of the criteria of neutrality and the conditions of effective free competition in the tobacco market throughout Spain. This agency provides the total of sales of tobacco manufacture to specialist stores (tobacconists) in Spain (excluding the Canary Islands) valued at retail price by type and brand. It also offers the commission applied, which is legally fixed when the sale is made through vending machines.

Estimates are derived by adding to this total an estimate of the amount of the commission charged in vending machines.

The figure thus obtained is added to the estimate of the expenditure in the Canary Islands. This is done from the data on collection of excise taxes on tobacco in Canary Islands. Consumption of cigarette papers is added from the HBS 02.2.0.3 subclass with an assumption of the proportion of this item in this subclass.

Finally, the figure thus obtained is added to the estimated illegally consumption of tobacco.

With respect to the following years, estimates of the legal consumption of tobacco is based on information published by the Commissioner of the Tobacco Market, complete with information provided by the Canary Tax Administration about collection of excise taxes on tobacco in Canary Islands.

02.3 Narcotics

The figure of the estimated illegally consumption of narcotics is included.

5.7.3.3 03 Clothing and footwear

The preliminary estimate by product is based on the results of the HBS and in some cases on the *Statistics on Products in the Trade Sector* (EPSC).

In the case of class 03.1.3 *Other clothing items and accessories*, the estimate obtained from the HBS has been added to an estimate of expenditure of households on protective helmets for motorcyclists and cyclists (an expenditure not included in class 03.1.3 of COICOP/HBS, but rather in 09.3.2). This estimate was derived by extrapolating the share of consumer spending by households in Spain *on other clothing items and accessories* for the product *other manufactured goods n.e.c.* (CPA 32, according to estimates made for the preparation of the *Supply and Use Table* via a rate corresponding to the year-on-year rate of change in

the number of drivers' permits exclusively for motorcycles and mopeds according to the Statistical Yearbook of the Traffic Department of the Ministry of Interior and the Consumer Price Index on clothing accessories and repairs.

Estimates are checked against other sources, specified in detail below for each class of this division of the COICOP:

In the case of class 03.1 clothing items, EPSC provides the turnover of each branch of activity of the *retail trade in textiles* (CPA 13) and *clothing* (CPA 14), as well as the percentage of the turnover of each branch of activity generated by purchases of final consumers. We have also analysed the data published by the Industrial Textile and Garment Observatory of the Ministry of Industry and Tourism on the turnover of the branches of activity of the *textile industry* (NACE 13) and the *garment industry* (NACE 14) and on their imports and exports. For CPA 14 product, the estimates derived from EPSC source, has been partially used as weighted average with the HBS.

In the case of class 03.2 *Footwear*, an estimation has also been developed on class 03.2.1 *Shoes and other footwear* based on the EPSC and HBS: for CPA 15 product, a weighted average of EPSC and HBS has been chosen.

With respect to the following years, an extrapolation is made according to the weighted average evolution of HBS and EPSC data (weights are decided according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning.

5.7.3.4 04 Housing, water, electricity, gas and other fuels

04.1 and 04.2 Effective and imputed housing rentals

Estimates on *effective rentals for housing* (COICOP 04.1) and *imputed rentals for housing* (04.2) has been carried out according to what is described in section 3on the production from services of rental of owner-occupied dwellings and services of actual rental of dwellings.

The household expenditure on 04.1 results from adding the production of services of actual rental of dwellings to that made by the (usual) residents in hotels.

The HCFE on 04.2 coincides with the production of services of rental of owner-occupied dwellings.

04.3 Maintenance and repair of the dwelling

From the costs of repair and maintenance of housing, we should only count as *final consumption expenditure* the expenditure of households in the cleaning, decoration and maintenance of the dwellings to the extent these are activities that can be carried out by the tenants themselves. The preliminary estimate of the expenditure in this group of the COICOP is based on various sources of information, depending on the kind of group:

For the estimation of class 04.3.1 *Materials for the maintenance and repair of housing*, the results have been used from the EPSC, compiled by the INE, which provides the turnover of different branches of activity of retail trade in the product hardware, paints and glass, sanitary material for construction and heating, as well as the percentage of the turnover of each activity generated by the purchases of final consumers. An estimate on the household expenditure on hardware, paints and glass, sanitary material for construction

and heating is then made based on the sum of all the branches of activity of its turnover regarding the sales of said product multiplied by the percentage of the turnover of the branch generated by the purchases of final consumers, adding the corresponding VAT under the average VAT rate in effect to the resulting figure (at basic prices). The resulting figure has been distributed in different classes of the COICOP according to the percentage structure of expenditure in these classes provided by the HBS.

For the CPA product 20.3 (Paints, varnishes and similar coatings, printing ink and mastics) of the COICOP class 04.3.1, a weighted average of EPSC and HBS has been used. For the rest of products only the HBS has been used in the estimations for this COICOP class.

With respect to the base year 2021 onwards, an extrapolation is made of the expenditure in COICOP class 04.3.1 according to the weighted average evolution of HBS and EPSC (weights are established according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

The estimate of household expenditure in 04.3.2 *Services for the maintenance and repair of the dwelling* in the CPA 43 (*Specialised construction works*) is obtained by adding the expenditure on current services and repairs of the dwelling in that product according to the HBS to an estimate of the value of repairs performed in dwellings that are paid for by insurance companies and should be considered final consumption expenditure. This estimate is carried out based on the *Annual Statistical Report of Underwriters* (published by the Ministry of Economy, Trade and Business), which provides total benefits paid by the insurance branch and the *Social Report on Spanish Insurance* by the Spanish Union of Insurance and Reinsurance Entities (UNESPA), which provides the value of direct transfers from multi-risk insurance companies to repair companies, taking the following steps:

1. The total transfers are estimated by insurance companies to repair companies for remedial repairs in households applying the percentage of benefits paid by them in the household multi-risk branch over the total benefits from multi-risk insurance policies to the total transfer from insurance companies to repair companies.

2. The total of transfers made by insurance companies to repair companies for remedial repairs in households is broken down into the following COICOP classes: 04.3.2 *Services for maintenance and repair of the dwelling*, 05.1.3 *Repair of furniture, furnishings and floor coverings*, 05.2.0 *Household textiles*, 05.3.3 *Repair of household appliances*, 05.4.0 *Glassware, tableware, household utensils*, 05.5.1 *Mayor tool and equipment*, 05.5.2 *Small tool and miscellaneous accessories*, 09.1.5 *Repair of audio-visual, photographic and information processing equipment*, 09.2.3 *Maintenance and repair of other major durables for recreation and culture* and 09.3.2 *Equipment for sport, camping and open-air recreation*. This broken down by COICOP and CPA is made taken in count the HBS structure of the expenditure of households in these COICOP functions and the corresponding CPA products associated.

With respect to the base year 2021 onwards, an extrapolation of the COICOP class 04.3.2 is made according to the evolution of HBS. Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

04.4 Water supply and miscellaneous services relating to the dwelling

The preliminary estimate is based on the HBS. However, in each class of this group additional sources have been used to check against the estimates obtained with the HBS:

In class 04.4.1 *Water supply*, use was made of the *Survey on Water Supply and Sanitation*, prepared by the INE, which provides the total volume of water distributed to households and the unit cost per cubic metre of water (comparable to an average price, according to the methodology of the operation), and through the product of the two obtaining an estimate of household expenditure on this class in Spain. Another source analysed is the *Living Conditions Survey*, compiled by the INE, which provides an estimate of the costs arising from the use of the dwelling, that is: spending on water, gas, electricity, fuel, etc.

In class 04.4.2 *Refuse collection*, also use was made of *Living Conditions Survey*, compiled by the INE, which provides an estimate of the costs arising from refuse collection.

As for class 04.4.3 *Sewage* there has been analysis of the information provided by the Spanish Association of Water Supply and Sanitation (AEAS), which provides an indicator of the price paid by users of the service of the integral water cycle, for each service that integrates and by type of use (domestic and non-domestic), in combination with the *Survey on Water Supply and Sanitation*, prepared by the INE, which provides the total invoiced amount of sanitation and water treatment.

For class 04.4.4 *Other dwelling-related services* n.e.s there has been an analysis of the information provided by the *Structural Business Survey: Services* (SBS), developed by INE, which provides the expenditure of services related with this class of COICOP.

With respect to the following years, an extrapolation of the COICOP 04.4 classes is made according to the evolution of HBS. Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

04.5 Electricity, gas and other fuels

The HBS has been used as a basic source. However, alternative comparative sources have been used. They are described below.

With respect to the classes: 04.5.*1 Electricity*, 04.5.2 *Gas,* 04.5.3 *Liquid fuels and* 04.5.4 *Solid fuels,* an analysis of the results of the *Living Conditions Survey* was made.

For the aggregate of the products *Manufactured gas; distribution services of gaseous fuels through mains* (CPA 35.2) and *Steam and air conditioning supply services* (CPA 35.3) within the class 04.5.5, the estimates derived from EPSC have been used. For the rest of products of classes: 04.5.*1 Electricity*, 04.5.2 *Gas,* 04.5.3 *Liquid fuels and* 04.5.4 only the HBS has been used.

Finally, in the case of class 04.5.5 *Head energy* has been used the *Head and Cold Network Census* from the Enterprises Association of Head and Cold Network *(AECyF)*. For complete the estimation in this COICOP class, *the Consumption Price Index (CPI)* in 04.5 COICOP of INE has been used to extrapolate previous estimations of prices in this class.

With respect to the base year 2021 onwards, an extrapolation of the expenditure in classes of the COICOP 04.5 is made according to a weighted average evolution of HBS, EPSC and the product of a volume index derived from the annual data published by the Ministry of Industry and Tourism on the collection of excise duties on energy and a price index (CPI) of each COICOP class (weights are set up according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

5.7.3.5 05 Furniture and items for the household and for routine household maintenance

The preliminary estimate is based on various sources of information, as described below.

05.1 Furniture and furnishings, carpets and other floor coverings

The estimate of expenditure on 05.1.1 *Furniture and accessories* for the product CPA 31 (*Furniture*) is obtained as the average derived from the results of the HBS and the average of those obtained using the EPSC. The EPSC provides the turnover for retail trade activities in *other household products (furniture, crockery, musical instruments, wallpaper, etc.)*, and the percentage of such turnover in each branch of activity generated by purchases of final consumers. An estimate is then made of the expenditure on other household products (furniture, crockery, musical instruments, wallpaper, etc.) based on the sum, in all activities of its turnover on the sales of the product multiplied by the percentage of the turnover of the branch generated by purchases of final consumers, adding the corresponding VAT under the average VAT rate in turn to the resulting figure (at basic prices). In addition, through a hypothesis of correspondence of this product with different classes from the COICOP, consumer spending has been distributed in the same estimate in those classes maintaining the percentage structure of household expenditure on these provided by the HBS.

For the product CPA 31 (*Furniture*) of the class 05.1.1, the estimates derived from supply source (EPSC), has been partially used as weighted average with the HBS. For the rest of products of this class only the HBS has been used.

The estimate of expenditure on 05.1.2 *Carpets and other floor coverings* is derived from the results of the HBS. Nevertheless the following have been used as alternative sources of comparison: EPSC, which provides the turnover for activities of retail trade in textile products (CPA 13), and the percentage of such turnover in each branch of activity generated by purchases of final consumers; information published by the Textile and Clothing Sector Industrial Observatory of the Ministry of Industry and Tourism on the turnover of the branches of activity of the textile industry (NACE 13) and the garment industry (NACE 14).

In class 05.1.3 *Repair of furniture, furnishings and floor coverings*, the estimate is obtained by adding the results derived from the HBS to the value of the repairs paid directly by insurance companies to repair companies, which is estimated using the *Annual Statistical Report on Underwriters* published by the Ministry of Economy, Trade and Business, which provides the total benefits paid by insurance class and the Social Report on Spanish Insurance by the Spanish Union of Insurers and Reinsurers (UNESPA), which provides the value of the direct transfers from multi-risk insurance companies to the repair companies, in the following steps:

1. The total transfers are estimated by insurance companies to repair companies for remedial repairs in households applying the percentage of benefits paid by them in the household multi-risk branch over the total benefits from multi-risk insurance policies to the total transfer from insurance companies to repair companies.

2. The total of transfers made by insurance companies to repair companies for remedial repairs in households is broken down into the following COICOP classes: 04.3.2 *Services for maintenance and repair of the dwelling*, 05.1.3 *Repair of furniture, furnishings and floor coverings*, 05.2.0 *Household textiles*, 05.3.3 *Repair of household appliances*, 05.4.0

Glassware, tableware, household utensils, 05.5.1 *Mayor tool and equipment*, 05.5.2 *Small tool and miscellaneous accessories*, 09.1.5 *Repair of audio-visual, photographic and information processing equipment*, 09.2.3 *Maintenance and repair of other major durables for recreation and culture* and 09.3.2 *Equipment for sport, camping and open-air recreation*. This broken down by COICOP and CPA is made taken in count the HBS structure of the expensive of households in these COICOP functions and the corresponding CPA products associated.

With respect to the following years, an extrapolation of the COICOP 05.1 classes is made according to a weighted average evolution of HBS and EPSC (weights are established according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products

05.2 Household textile products

The estimate is obtained by adding the results derived from the HBS to the value of the repairs paid directly by insurance companies to repair companies, estimated according to the procedure already described in the case of group 05.1.

Use has also been made as alternative sources of comparison of EPSC and the information published by the Textile and Garment Industrial Observatory of the Ministry of Industry and Tourism, similar to what was done in class 05.1.2.

For the product CPA13 of the class 05.2.0, the estimates derived from EPSC, has been fully used. For the rest of products of this class only the HBS has been used.

With respect to the following years, an extrapolation of the COICOP 05.2 classes is made according to the weighted evolution of HBS and EPSC data (weights are established according to the supply and use balancing). Finally, the distribution between the different products in this COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

05.3 Household appliances

For the estimates of expenditure in 05.3.1 *Large electric or non-electric household appliances and* 05.3.2 *Small household appliances* derived from the results of the HBS. There has been an analysis of other alternative sources of comparison: EPSC, which offers the turnover of the activities of retail trade in appliances as well as the percentage of such turnover in each branch of activity generated by purchases of final consumers; the information published by the specialist journal Electromarket, which provides sales of white goods (major appliances connected to the kitchen and household cleaning), domestic air conditioning and electric heating and sales of small appliance applications.

For the product CPA 28 (*Machinery and equipment n.e.c.*) of the class 05.3.1, a weighted average of the estimates derived from EPSC and the HBS has been used. For the rest of products of classes 05.3.1 and 05.3.2 s only the HBS estimation has been used.

Finally, the estimate in class 05.3.3 *Repair of household appliances* is obtained by adding to that derived from the HBS an estimate of the value of the repairs paid directly by insurance companies to repair companies, drawn up according to the procedure described for class 05.1 of the COICOP.

With respect to the base year 2021 onwards, an extrapolation of the expenditure in each class of COICOP 05.3 is made according to the weighted evolution of HBS and EPSC data (weights are established according to the supply and use balancing). Finally, the

distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

05.4 Glassware and crystal, tableware and household utensils

The estimate has been derived from the results of the HBS, to which an estimate has been added of the value of repairs paid directly by insurance companies to repair companies under multi-risk home insurance on tools and equipment for house and garden, also prepared according to the procedure described in the case of group 05.1.

In addition, have been taken into account, as sources of comparison: the results of the EPSC, which offers the turnover of the branches of retail trade in hardware, paints and glass, sanitary material for construction and heating, as well as the percentage of such turnover in each branch of activity generated by purchases of final consumers.

With respect to the following years, an extrapolation of the expenditure in each class of the COICOP 05.4 is made according to a weighted average evolution of HBS and EPSC data (weights are established according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

05.5 Tools and equipment for house and garden

The estimate of expenditure in group 05. 5 *Tools and equipment for house and garden* of the COICOP is based, in addition to the HBS, on the EPSC, which provides the turnover for of retail trade activities in *other household products (furniture, crockery, musical instruments, wallpaper, etc.)*, and the percentage of such turnover in each industry generated by purchases of final consumers. An estimate is then made of the expenditure on other household products (furniture, crockery, musical instruments, wallpaper, etc.) based on the sum, in all activities of its turnover on the sales of the product multiplied by the percentage of the turnover of the branch generated by purchases of final consumers, adding the corresponding VAT according to the average VAT rate in turn to the resulting figure (at basic prices). In addition, through a hypothesis of correspondence of this product with different classes from the COICOP, household expenditure has been distributed in the same estimate into those classes maintaining the percentage structure of consumer spending by households on the same provided by the HBS.

The estimate in this COICOP group has been obtained by adding the average of estimates derived from the HBS and the EPSC to an estimate of the value of the repairs paid directly by the insurance companies to repair companies under multi-risk home insurance on glassware and crystal, tableware and household utensils, prepared according to the procedure described in the case of group 05.1.

For the aggregate of the products *Batteries and accumulators* (CPA 27.2), *Wiring and wiring devices* (CPA 27.3) and *Electric lighting equipment* (CPA 27.4) of the class 05.5.2, a weighted average of estimates derived from EPSC and the HBS. For the rest of products of classes 05.5.1 and 05.5.2 only the HBS data have been used.

With respect to the base year 2021 onwards, an extrapolation of the expenditure in each class of the COICOP 05.5 is made according to the weighted average evolution of HBS and EPSC data (weights are established according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

05.6 Goods and services for ordinary household maintenance

The estimate on class 05.6.1 *Non-durable household goods* has been derived from the results of the HBS.

However, there has been an analysis of EPSC data, which offers the turnover of the branches of retail trade in cleaning supplies, and the percentage of such turnover in each branch of activity generated by purchases of final consumers.

With respect to the following years, an extrapolation of the COICOP class 05.6.1 is made according to a weighted average evolution of HBS and EPSC data (weights are established according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

The estimate in class 05.6.2 *Domestic and household services* is derived from the estimates made of the aggregates of the branches of activity of *households employing domestic staff* (division T of the NACE), taking into account that the production of said branch, valued using the remuneration of employees thereof, is allocated entirely to the final consumption expenditure of households. To this production is added an estimate of spending on other goods and services for routine household maintenance derived from the results of the HBS on household spending on sub-class 05.6.2.3 *Other housing services (dry cleaning, furniture rental, disinfection, etc.)* from the COICOP/HBS.

5.7.3.6 06 Health

The preliminary estimates are based, as well as on the results of the HBS, on other sources of information, as described below for each of the COICOP groups.

06.1 Medical products, devices and equipment

In the case of class 06.1.1 *Pharmaceutical Products* (includes medical preparations, medicinal products, patent medicines, serums and vaccines, vitamins and minerals, cod liver oil, halibut liver oil and oral contraceptives), estimates come from HBS data.

However, an alternative estimate has been tried as contrast. It comes from the *Statistics on Products in the Trade Sector* (EPSC) provides the turnover in pharmaceutical products (CPA 21) for the retail branches and the percentage of such turnover in each branch of activity generated by the purchases of final consumers. An estimation is then made of the consumer spending on these products based on the sum, in all activities, of its turnover on sales of said product multiplied by the percentage of the turnover of the branch generated by the purchases of final consumers and adding the corresponding VAT according the average VAT rate in effect to the resulting figure (at basic prices). The household consumption of that product, after deduction from the same of the part financed by the *General Government* sector (*social transfers in kind acquired in the market*, which constitute final consumption expenditure of the *General Government*), accounts for the majority of households consumption on class 06.1.1 of the COICOP (corresponding to medicinal products and medical preparations). The value of the mentioned pharmaceutical products purchased by households that are subsidised by the *General Government* sector is obtained from the information on billing of prescriptions to the National Health System published by the Ministry of Health, in the case of pharmaceutical expenditure through official prescriptions by the National Health System.

Estimates in class 06.1.2 *Other medical products* is derived from the results of the HBS for all products of this COICOP class. However, this estimation has been compared also with other sources of information: the EPSC, which provides the turnover for the product medical and orthopaedic articles) of the branches of retail trade and the percentage of such turnover in each branch of activity generated by purchases of final consumers.

Estimates in *therapeutic devices and equipment* (COICOP 06.1.3) has been derived also from the HBS for all products of this COICOP class.

With respect to the base year 2021 onwards, an extrapolation of the COICOP class 06.1 is made according to a weighted average evolution of HBS and EPSC data (weights are set up according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

06.2 Outpatient services

The estimation in *health services* (06.2.1) is derived from the results of the HBS, plus an estimate of services paid directly by insurance companies under the insurance policies contracted by them.

This latter estimate has been carried out based on the information provided by the Association of Insurance Companies (UNESPA), which includes the total amount of benefits paid under health insurance policies and sanitary assistance provided under car insurance policies.

The estimation in *dentist services* (06.2.2) and *paramedical services* (06.2.3) is derived from the results of the HBS for all products of this COICOP class.

With respect to the base year 2021 onwards, an extrapolation in each class of the COICOP 06.2 is made according to the weighted average evolution of HBS, UNESPA and ICEA data (weights are established according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

06.3 Hospital services

The estimates in *hospital services* (06.3) is derived from the results of the *Statistics on Health Establishments providing In-Patient Care*, prepared by the Ministry of Health, which provides the income of such establishments for provision of health care services received from individuals, private insurance companies and accident mutual insurance companies. The non-use of the results derived from the HBS is justified by the need to take into account the consumption of households on these services are paid by insurance companies under the policies they have subscribed.

With respect to the following years, an extrapolation of the expenditure of the COICOP class 06.3 is made according to a weighted average evolution of HBS, UNESPA and ICEA data (weights are established according to the supply and use balancing).

5.7.3.7 07 Transport

The preliminary estimates in this function of the COICOP is based both on the results of the HBS and on other sources of information, as described below for each of the groups of this function in the COICOP.

07.1 Purchase of vehicles

Cases of new and used vehicle purchases are distinguished:

1. New motor vehicles:

An estimate of spending on purchases of new motor vehicles is obtained as the average derived from the results of the HBS and the estimate obtained using the information provided by the Traffic Department of the Ministry of Interior (DGT) on number of annual registrations whose owner is a natural person and for a vehicle that will be for private use based on certain characteristics and estimates of average retail prices by vehicle type, make and model prepared from price information. Consumption expenditure on new motor vehicles is estimated by multiplying the annual number of registrations by characteristics (type of vehicle, brand and model) by the average prices estimated in each group.

Then, for the product CPA 29.1 (*Motor vehicles*) of the subclass 07.1.1.1 (*new motor cars*), a weighted average of the estimates derived from these administrative records and the HBS data is used. For the rest of the products of subclass 07.1.1.1 only the HBS estimates has been used.

2. Used motor vehicles:

Estimates on the purchase of used motor vehicles has been carried out from the information provided by the DGT on the number of transfers of ownership of vehicles per year based on year of vehicle registration, legal status of the seller and buyer and the type of vehicle and estimates of average prices for second-hand motor vehicles by type of vehicle.

In the estimate the following steps have been taken:

– The total value of transfers of second-hand vehicles is estimated according to the legal status of the buyer and seller multiplying the number of transfers by year of registration and vehicle type by the average prices estimated in each group.

– Assumption is made on the percentage of the purchases and sales between natural persons, sales from natural persons to legal persons, sales from legal persons to natural persons and sales and purchases between legal persons are performed with the intervention of a dealer and on the profit margin of the dealer.

– On sales in which a dealer did not intervene, a property transfer tax rate is considered.

Then, for the product CPA 29.1 (Motor vehicles) of the subclass 07.1.1.2 (used cars), a weighted average of the estimates derived from administrative records and HBS data has been used. For the rest of products of subclass 07.1.1.1 only HBS has been used.

In the estimation of household spending on motorcycles and mopeds (COICOP 07.1.2), there is a distinction between cases of purchases of new and used motorcycles and mopeds:

3. New motorcycles and mopeds:

The estimation of spending on purchases of new motorcycles and mopeds by households is obtained using the information provided by the DGT on the number of annual registrations whose owner is a natural person and for a vehicle that will be for private use and an estimate of average retail prices. The estimation of household final consumption expenditure on motorcycles and mopeds is the product of both figures.

Therefore, for the product CPA 30.9 (*Transport equipment n.e.c*) of the subclass 07.1.2.1 (new motorcycles), the estimates derived from administrative records has been fully used. For the rest of products of subclass 07.1.2.1 only the HBS data has been used.

4. Used motorcycles and mopeds:

Information provided by the DGT on the number of transfers of ownership of vehicles per year based on legal status of the seller and buyer and the type of vehicle and an estimate of the average price for second-hand motorcycles and mopeds. Thus, the estimation was carried out in a similar way to the case of other motor vehicles (COICOP 07.1.1).

Therefore, for CPA 30.9 (*Transport equipment n.e.c*) of the subclass 07.1.2.2 (used motor cycles), the estimates derived from administrative records has been used. For the rest of products of subclass 07.1.2.2 only the HBS data has been used.

Finally, for the products of the classes 07.1.3 and 07.1.4 of the COICOP (*Bicycles and animal-drawn vehicles*), the estimate corresponds to the result derived from the HBS.

With respect to the base year 2021 onwards, an extrapolation of the expenditure in COICOP subclasses 07.1.1.1, 07.1.1.2, 07.1.2.1 and 07.1.2.2 are made according to the weighted evolution of HBS and the product of a volume index derived from the DGT data and a price index (CPI). Weights are established according to the supply and use balancing.

On the other hand, the extrapolation in the COICOP classes 07.1.3 and 07.1.4 are made also according to a weighted evolution of HBS and EPSC data (weights are established according to the supply and use balancing).

07.2 Operation of personal transport equipment

In estimates in *spare parts and accessories for personal transport equipment* (COICOP 07.2.1) use has been made of both the HBS and the EPSC, prepared by INE.

EPSC provides: the turnover of the branch of activity *Retail sale of spare parts and accessories for motor vehicles* (class 4532 of the NACE) corresponding to the retail sale of spare parts and accessories for vehicles, as well as the turnover thereof by client, on the one hand; turnover for the various branches of activity of retail trade in the product wholesale and retail trade of parts and accessories of motor vehicles and the percentage of the turnover of each branch of activity generated by the purchases by final consumers, on the other.

Household consumption is then estimated on for sale and repair of motor vehicles and motorcycles adding the corresponding VAT according the average VAT rate in effect for this type of product to the turnover of the branch of activity *Retail trade of parts and accessories of motor vehicles* (class 4532 of NACE) corresponding to the retail sale of parts and accessories for vehicles.

An estimate on the purchase of parts and accessories for motor vehicles made in establishments classified in other branches of activity is also added. It comes from the sum, in all activities, of its turnover from sales of said product multiplied by the percentage of the turnover of the branch generated by purchases made by final consumers, adding the corresponding VAT according to the applicable average VAT rate to the resulting figure (at basic prices).

The final estimate in *spare parts and accessories for personal transport equipment* (COICOP 07.2.1) comes from:

– For *Rubber products* (CPA 22.1) of the COICOP class 07.2.1, a weighted average of the estimates derived from EPSC and the HBS.

– For the aggregates of products *Batteries and accumulators* (CPA 27.2), *Wiring and wiring devices* (CPA 27.3) and *Electric lighting equipment* (CPA 27.4) of the COICOP class 07.2.1, the EPSC.

– For the rest of products of COICOP class 07.2.1, HBS data.

In the case of class 07.2.2 *Fuels and lubricants for personal transport equipment*, the estimate is derived from the results of the HBS. Nevertheless, it has been considered, as contrast, also the EPSC, compiled by the INE, which provides the turnover of different branches of activity of retail trade in the product Fuels for motor vehicles, as well as the percentage of the turnover from each activity generated by the purchases of final consumers.

With regard to class 07.2.3 *Maintenance and repair of personal transport equipment*, the estimate corresponds to that obtained from the HBS, adding an estimate of household consumption expenditure corresponding to payments made by auto insurance companies to vehicle repair workshops as reimbursements for the repair of vehicles for private individuals under the insurance policies taken out by the latter. The latter estimate is obtained from the information in the *Corporate Report on Insurance* published by the Spanish Union of Insurance and Reinsurance (UNESPA), which provides the total number of payments made by insurance companies to car workshops by insurance companies, approximating the portion thereof relating to vehicle repairs for private use by the percentage of the pool of vehicles intended for that purpose in accordance with the data provided by the National Association of Automobile Manufacturers (ANFAC).

To estimate in the class 07.2.4 *Other services relating to personal transport equipment*, various sources of information are used in addition to the HBS itself, depending on the subclass thereof:

Estimates in the products CPA 52.2 (*Support services for transportation*) and CPA 68 (*Real estate services*) of the subclass 07.2.4.1 *Hire of garages, hire of vehicles and hire of other related items* is based on the aggregation of estimates of spending on private parking services and rental of parking spaces not linked to the use of any housing (whether primary or secondary), plus spending on car rental and plus spending on hire-purchase of vehicles.

On the other hand, for the aggregate of the products CPA77.1 (Rental and leasing services of motor vehicles), Rental and leasing services of personal and household goods (CPA 77.2) and Rental and leasing services of other machinery, equipment and tangible goods (CPA 77.3) within the subclass 07.2.4.1 estimates come from the HBS data.

For spending at regulated parking areas (COICOP 07.2.4.2), the information published by the Madrid City Council in the revenue collected for this item is used.

For spending on *toll services for personal vehicles* (COICOP 07.2.4.3), the *Report on the Toll Road Sector in Spain* published by the Ministry of Transport and Sustainable Mobility has been used, which facilitates toll revenues collected by all highway concessionaire companies and the index of daily mobility (number of vehicles per day) in the same, breaking them down by light and heavy vehicles and average prices for both types of vehicles.

Finally, estimates in the subclass 07.2.4.4 of the COICOP (*Driving lessons, driving tests and driving licences*), data from the DGT on the number of driving licences and permits issued

to new drivers, holders of other permits, duplicate licences and renewals, broken down by type of permit and Autonomous Community and the estimate published by the NGO "FACUA- Consumidores en Acción" on the average cost of issuing driving licenses by city have been used in this COICOP subclass.

Therefore, for the product CPA85 (*Education services*) of the subclass 07.2.4.4 *Driving lessons, driving tests and driving licences* a weighted average of estimates derived from the procedure described before and the HBS have been used.

With respect to the base year 2016 onwards, an extrapolation of the COICOP classes 07.2.1 and 07.2.2 are made according to the weighted evolution of HBS and EPSC data (weights are established according to the supply and use balancing). On the other hand, the extrapolation in the COICOP 07.2.3 class is made according to the evolution of HBS data. Finally, the distribution between the different products in COICOP 07.2 classes are established according to according to the distribution in the previous year and the supply and use balancing in the concerning products.

07.3 Transport Services

In the estimation in transport services basically use is made of various sources of information in addition to the HBS, depending on the COICOP class being considered:

In the case of the class 07.3.1 *Passenger transport by railway,* estimates come from HBS. However, for checking purposes, an alternative estimate has been realised from the *Statistical on Products in the Services Sector (EPSS)*, prepared by the INE, that provides annual turnover from transport passengers by rail, on spending in commuter trains by adding the corresponding VAT according the average VAT rate in effect) to that turnover and subtracting an estimate of the portion thereof corresponding to combined passenger transport (COICOP 07.3.5).

For the class 07.3.2 *Passenger transport by road*, which contains only the product CPA49.3 (*Other passenger land transport services*), EPSS, prepared by INE, has been used. It provides annual turnover from transport passengers by road, so an estimate of spending on commuter trains by adding the corresponding VAT according the average VAT rate in effect to that turnover and subtracting an estimate of the portion thereof corresponding to combined passenger transport (COICOP 07.3.5) has been used.

In the case of all products of the class 07.3.3 *Passenger transport by air*, only HBS data have been used.

In the case of all the products included in the class 07.3.4 *Passenger transport by sea and inland waterway*, HBS has been used. However, an alternative estimate has been also checked from EPSS. It provides the annual turnover from transport passengers by sea and inland waterway, so an estimate is derived of spending on commuter trains by adding the corresponding VAT according the average VAT rate in effect to that turnover and subtracting an estimate of the portion thereof corresponding to combined passenger transport (COICOP 07.3.5.

In the case of class 07.3.5 *Combined passenger transport,* for the product CPA 49.3 (*Other passenger land transport services*), HBS data has been used. However, other sources have been checked: the *Annual Report* by the Madrid Regional Transport Consortium, which provides information on the number of sales of multimode tickets and periodic transport passes by type and rates thereof and the number of journeys by mode of transport; the *Annual Report* by the Barcelona Transport Consortium, which includes revenues from sales of travel tickets and the number of trips by type of transport; the *Annual Report* by the Vizcaya Transport Consortium, which provides its annual turnover and the percentage

of multimode tickets within the total market share; the *Management Report* by the Valencian Mobility Agency, which provides sales figures on periodic transport passes and passenger numbers by mode and by tickets; the *Annual Report* by the Málaga Transport Consortium, which includes revenues from sales of travel tickets and the number of trips by type of transport and the *Urban Transport Report* published by the Ministry of Transport and Sustainable Mobility, which provides the number of underground travellers by city.

An estimate has been prepared of spending on combined passenger transport, distributing it into the amounts that would correspond to each mode of transport used, adding the following estimates for the spending made in the cities of Madrid, Barcelona, Bilbao and Valencia and raising the resulting amount to the total for Spain based on the percentage weight they represent in number of underground journeys over the total.

In closing, for all products in class 07.3.6 *Other transport services purchased*, HBS data has been used. However, EPSS has been also checked, which provides the turnover associated with moving services, brokerage commissions for travel agents and tour operators and the breakdown of the turnover of each branch of activity by type of customer. An estimate is then obtained of the household final consumption expenditure on moving services adding the corresponding VAT under the average rate of VAT in effect to the turnover associated with this product and the percentage of the turnover of the activities transport of goods by road (49.41 of NACE Rev. 2) and moving services (49.42 of NACE Rev. 2) corresponding to sales to households. An estimate is obtained in a similar way of the household final consumption expenditure on travel agency commissions (charged separately) adding the corresponding VAT under the average VAT rate in effect to the turnover associated with this product and the percentage of the turnover of travel agencies (79.11 of NACE Rev. 2) and tour operators (79.12 of NACE Rev. 2) for sales to households.

With respect to the base year 2021 onwards, an extrapolation of the expenditure in COICOP classes 07.3.1, 07.3.2, 07.3.3, 07.3.4, and 07.3.6 are made according to the weighted average evolution of HBS and EPSS data. In addition, for COICOP classes 07.3.1, 07.3.2, 07.3.3 and 07.3.4, a volume index of the annual number of passengers published by the Transport of Passengers Statistics (ETV) and the CPI in each COICOP class are also used. Weights are established according to the supply and use balancing in each COICOP class. On the other hand, the extrapolation of the expenditure in the COICOP class 07.3.5 is made according to the evolution of HBS data. Finally, the distribution between the different products in COICOP 07.3 classes are established according to the distribution in the previous year and the supply and use balancing in the concerning products.

5.7.3.8 08 Communications

The preliminary estimates is based on the results of the HBS and on other sources of information, as described below for each of the groups of this function of the COICOP.

08.1 Postal services

Estimates is derived from the results of the HBS.

However, as a comparison, use has been made of the *Statistical on Products in the Services Sector (EPSS),* which provides the annual turnover of postal activities under universal service obligation (53.10 from NACE Rev. 2) and other postal and courier activities (53.20 of NACE Rev. 2), and the percentage thereof corresponding to sales to households.

With respect to the base year 2021 onwards, an extrapolation of COICOP class 08.1 is made according to the weighted average evolution of HBS and EPSS data (weights are established according to the supply and use balancing).

08.2 Telephone and fax equipment

Estimates in *telephone and fax equipment* in Spanish economic territory is derived from the results of the HBS.

However, as a comparison, it has been used the EPSC, which provides the annual turnover of the aggregate of the products *Communication equipment* (CPA 26.3), *Consumer electronics* (CPA 26.4), *Measuring, testing and navigating equipment; watches and clocks* (CPA 26.5), *Irradiation, electro medical and electrotherapeutic equipment* (CPA 26.6), *Optical instruments and photographic equipment* (CPA 26.7), Magnetic and optical media (CPA 26.8) and the percentage thereof corresponding to sales to households.

With respect to the base year 2021 onwards, an extrapolation of the expenditure in the 08.2 COICOP classes is made according to the weighted evolution of HBS and EPSS data (weights are established according to the supply and use balancing). Finally, the distribution between the different products in this COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

08.3 Telephone and fax services

The estimation in *telephone and fax services* in Spanish economic territory is derived from the results of the HBS.

However, as a comparison, use has been made of the EEE, which provides the annual turnover of the *telecommunication activities* (Division 61 of NACE Rev 2) and adding the corresponding VAT under the average rate of VAT in effect and estimating the sales corresponding to households for final consumption.

With respect to the following years, an extrapolation of the COICOP class 08.3 is made according to the weighted average evolution of HBS and SBS data (weights are established according to the supply and use balancing). Finally, the distribution between the different products in this COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

5.7.3.9 09 Recreation and culture

The preliminary estimates are based on the results of the HBS and on other sources of information, as described below for each of the groups of this function of the COICOP.

09.1 Audiovisual, photographic and data processing equipment and accessories

In the case of 09.1.1 Equipment for receipt, recording and reproduction of sound and image and 09.1.2 Photographic and cinematographic equipment and optical instruments, the information published by the specialist journal Electromarket, provides estimates for the sales of audio, television and video devices, as well as TV decoders and cameras. In addition, EPSC provides the percentage of the revenue for each retail trading activity generated by the purchases of end consumers.

In this way, an estimate has been obtained following these steps:

1. The sales in the national territory of each CPA product of these COICOP classes are disseminated by Electromarket.

2. An estimate of the percentage of those sales that corresponds to household final consumption, obtained from the percentage of the revenue for the retail trading activity generated by the purchases of final consumers according to the EPSC is applied to the figure obtained in 1).

3. The applicable average type of VAT is applied to 2).

4. The part of the households consumption in audio, television and video devices, as well as TV decoders and cameras that correspond with *equipment for receipt, recording and reproduction of sound and image* (COICOP 09.1.1) has been estimated through the weight of the spending in *equipment for receipt, recording and reproduction of sound and image* over the total expenditure in *equipment for receipt, recording and reproduction of sound and image, photographic and cinematographic equipment* according to the HBS.

5. The households' final consumption in photographic and cinematographic equipment has been estimated through the weight of spending in photographic and cinematographic equipment over the total expenditure in equipment for receipt, recording and reproduction of sound and image, photographic and cinematographic equipment, according to the HBS. Then, the household final consumption in photographic and cinematographic equipment and optical instruments has been estimated increasing the estimated amount for photographic and cinematographic equipment to the total expenditure in the COICOP 09.1.2 in line with the structure of spending in HBS.

Then, in the case of the aggregates of products Communication equipment (CPA 26.3), Consumer electronics (CPA 26.4), Measuring, testing and navigating equipment; watches and clocks (CPA 26.5), Irradiation, electro medical and electrotherapeutic equipment (CPA 26.6), Optical instruments and photographic equipment (CPA 26.7) and Magnetic and optical media (CPA26.8) within the COICOP class 09.1.1, the household final consumption has been estimated as a weighted average of the estimate described above and the HBS. For the rest of products of COICOP classes 09.1.1 and 09.1.2, only the HBS has been used.

For the COICOP classes: 09.1.3 *Processing and information equipment* and 09.1.4 *Resources for recording*, the following sources of information are used:

– The EPSC, which provides the revenue on the retail trading activities in relation with computers, peripherals and programmes as well as the percentage for the revenue for these branches of activity that correspond with purchases of end consumers.

– The journal Electromarket, which publishes an estimate of the sales of processing and information equipment.

Based on the first of these, an estimate is obtained for the households consumption on computers, peripherals and programmes, by applying to the revenue for retail trading activities of these products the percentage for the revenue of these branches that correspond with purchases of end consumers and by applying to the subsequent result the applicable average type of VAT. The amount obtained is spread over spending on *processing and information equipment* (COICOP 09.1.3) and spending on *resources for recording* (COICOP 09.1.4) in line with the structure of spending COICOP in HBS.

Based on the remainder, an estimate is obtained for the household consumption in *processing and information equipment* and *resources for recording* following these steps:

1. The sales in the national territory of each CPA product of these COICOP classes are disseminated by Electromarket.

2. An estimate of the percentage of those sales that corresponds to households' final consumption, obtained from the percentage of the revenue for the retail trading activity generated by the purchases of final consumers according to the EPSC is applied to the figure obtained in 1).

3. The average type of VAT is applied to 2).

4. The amount obtained is spread overspending on *processing and information equipment* (COICOP 09.1.3) and spending on *resources for recording* (COICOP 09.1.4) in line with the structure of spending in both COICOP according to the HBS.

For the product CPA 26.2 (*Computers and peripheral equipment*) of the COICOP class 09.1.3, a weighted average of EPSC and HBS has been used. For the rest of products of COICOP classes 09.1.3 and 09.1.4, only the HBS has been used.

Finally, for the type 09.1.5 *Repairs of audio-visual, photographic and data processing equipment*, the results from the *Structural Business Survey: Services* (ASS), created by the INE, have been checked, which provide the annual revenue for the activities of *repairs of audio and video electronic devices for domestic use* (95.21 of the NACE Rev.2) and of *repairs of computers and peripheral equipment* (95.11 of the NACE Rev.2), as well as the *Annual Statistics Report of Insurance Companies*, published by the Ministry of Finance, which provides the total number of payments made for each branch of insurance, and the *Corporate Report for Spanish Insurance* of the Spanish Union of Insurance Companies and Reinsurance Companies (UNESPA), which provides the value of the direct transfers from the multi-risk insurance companies to repair companies.

However, estimates in all CPA products of this COICOP class 09.1.5 are based on HBS, adding to the figure obtained an estimate of the value of the repairs directly paid out by the insurance companies to repair companies, based on the information provided thereon by the Ministry of Finance and UNESPA.

With respect to the base year 2021 onwards, an extrapolation of the expenditure of COICOP class 09.1 is made according to the weighted average evolution of HBS and EPSC data (weights are established according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

09.2 Other major durables for recreation and culture

The estimation in CPA products of 09.2.1 *Major durables for outdoor recreation* and *09.2.2 Musical instruments and major durables for indoor recreation* is derived from the results of the HBS. However, as a comparison, it has been used the *Statistics on Products in the Trade Sector* (EPSC), which provide the annual turnover of the some CPA products of this COICOP class and the percentage thereof corresponding to sales to households.

Finally, for the type 09.2.3 *Maintenance and* r*epair of other major durables for recreation and culture*, the results from the SBS have been checked, which provide the annual revenue for the activities of *repairs of audio and video electronic devices for domestic use* (95.29 of the NACE Rev.2) of other domestic articles, as well as the *Annual Statistics Report of Insurance Companies*, published by the Ministry of Finance, which provides the total number of payments made for each branch of insurance, and the *Corporate Report for Spanish Insurance* of the Spanish Union of Insurance Companies and Reinsurance

Companies (UNESPA), which provides the value of the direct transfers from the multi-risk insurance companies to repair companies.

However, for all CPA products of this COICOP class 09.2.3, only HBS has been considered, adding to the figure obtained an estimate of the value of the repairs directly paid out by the insurance companies to repair companies, based on the information provided thereon by the Ministry of Finance and UNESPA.

With respect to the following years, an extrapolation of the COICOP class 09.2 is made according to the weighted average evolution of HBS and EPSC data (weights are established according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

09.3 Other recreational items and equipment, gardens and pets

Estimates in CPA products of 09.3.1 *Games, toys and hobbies* is derived from the results of the HBS.

Estimates on CPA products of COICOP classes: 09.3.2 *Equipment for sports, camping and open-air recreation*, 09.3.3 *Gardens, plants and flowers* and 09.3.4 *Pets and related products* is also derived from the results of the HBS. However, as a comparison, it has been used also the EPSC, which provide the annual turnover of some CPA products of these COICOP classes and the percentage thereof corresponding to sales to households.

Finally estimates on CPA products of COICOP class 09.3.5 *Veterinary and other services for pets* is also derived from the results of the HBS. However, as a comparison, an estimate is obtained by applying to the aggregate of revenue for the aforementioned activities according to the SBS the percentage for the revenue for the branch of retail trading that corresponds with purchases of households and by adding the corresponding applicable average type of VAT.

With respect to the base year 2021 onwards, an extrapolation of the expenditure in the COICOP classes 09.3.1, 09.3.2, 09.3.3 and 09.3.4 are calculated according to the weighted average evolution of HBS and EPSC data, where weights are established according to the supply and use balancing. On the other hand, the expenditure in COICOP class 09.3.5 is extrapolated according to the weighted average evolution of HBS and SBS data (weights are set up also according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

09.4 Recreational and cultural services

For the type 09.4.1 *Recreational and sport services*, in addition to the HBS, the following has been used:

- The EEE, which provides the revenue for the activities of *management of sport facilities* (93.11 of the NACE Rev.2), *sports club activities* (93.12 of the NACE Rev.2), *gym activities* (93.13 of the NACE Rev.2), *other sport activities* (93.19 of the NACE Rev.2), *activities at fairgrounds and theme parks* (93.21 of the NACE Rev.2) and *other recreational and entertainment activities* (93.29 of the NACE Rev.2).
- The EPSC, which provides the percentage for the revenue for the branch of retail trading activity corresponding with consumption in households.

An estimate is obtained by applying to the aggregate of revenue for the aforementioned activities according to the EEE the percentage for the revenue for the branch of retail trading that corresponds with purchases of households and by adding the corresponding

applicable average type of VAT. To the subsequent result, an estimate of expenditure on individual or group lessons has been added, for lessons acquired outside of school, in bridge, chess, gymnastics, dance, music, ice skating, skiing, swimming and other recreational activities.

Finally, for the product CPA 93 (Sporting services and amusement and recreation services) of the COICOP class 09.4.1, a weighted average of the estimate derived from SBS and the HBS has been used. For the rest of products of COICOP classes 09.4.1 and 09.4.2, only the HBS has been used.

On the other hand, for all CPA products in the COICOP class 09.4.2 *Cultural services,* the estimate derives fully from the results of the HBS.

For the only CPA product CPA 92 (Gambling and betting services) of the COICOP class 09.4.3 Gambling, the Annual Report from the General Directorate of Gambling Planning data from different data sources about gambling in Spain have been collected:

- Sales and amounts awarded as prizes in its lotteries and gambling activity by State Organisation for State Lotteries and Gambling (SELAE) and by the National Organisation of Spanish Blind People (ONCE).
- Sales figures (including tips) and prizes distributed in casinos, bingo halls and recreational and gambling machines.
- Sales and amounts awarded as prizes in its lotteries and gambling activity in the scope of autonomous community.
- Sales and amounts awarded as prizes in its lotteries and gambling activity on-line.

Based on these sources, for each type of gambling activity the total value of the bets are obtained, as well as the amounts received as tips (in the case of casinos) and the amounts distributed as prizes. The difference between the amounts bet and paid as tips and those distributed as prizes form the household final consumption expenditure in the national economic territory for legal gambling activity. To the result that is obtained in this manner, an estimate on household final consumption in illegal gambling activity is added.

With respect to the base year 2021 onwards, an extrapolation of the classes of the COICOP 09.4 are made according to the weighted average evolution of HBS and SBS data (weights of these indices are established according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

On other hand for COICOP class 09.3.3, an estimate on household final consumption in legal gambling activity is made every year and for each type of legal gambling from the Annual Report of the General Directorate of Gambling Planning data. Alternative estimates are developed through extrapolations based on HBS and SBS data. The final estimate is decided taking into account the supply and use balancing.

09.5 Newspapers, books and papers and office supplies

The estimate in 09.5.1 *Books* derives from EPSC data and HBS data. The EPSC provides the revenue for retail trading activities in *Cultural and recreational items (books, DVDs, toys, sports equipment, art, etc.),* as well as the percentage for the revenue of each activity generated by the purchases of final consumers. Therefore, for the CPA product CPA 58.1 (*Publishing services of books, periodicals and other publishing services*) of the COICOP class 09.5.1 a weighted average of the EPSC and the HBS estimates has been used. For the other CPA product (J59) of class 09.5.1 only the HBS estimation has been used.

The estimate for the COICOP class 09.5.2 *Daily newspapers and periodicals* derives from the results of HBS. Nevertheless, the EPSC as alternative source has been analysed too, since the EPSC provides sales and percentage for the revenue of the retail trading activities generated by purchases of final consumers.

The estimate for the COICOP classes 09.5.3 *Diverse printed material and* 09.5.4 *Paper and office supplies and drawing materials* derives only from the results of HBS too. Nevertheless, the EPSC as alternative source has been analysed too, since the EPSC provides the revenue for retail trading activities in *Cultural and recreational items (books, DVDs, toys, sports equipment, art, etc..)*, as well as the percentage for the revenue of each activity generated by the purchases of end consumers. The consumption is therefore estimated on *Cultural and recreational items (books, DVDs, toys, sports equipment, art,.....)* based on the aggregate of all of the activities of these products of the percentage for the revenue generated by purchases of end consumers for its revenue in relation with sales, adding to the subsequent result the corresponding applicable average type of VAT. This amount is distributed among the corresponding types of the COICOP, in line with the structure of spending on consumption in households, according to the HBS.

With respect to the base year 2021 onwards, an extrapolation of the expenditure in each class of the COICOP 09.5 is made according to the weighted average evolution of HBS and EPSC data (weights are established according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

09.6 Tourist packages

Instead of using the HBS data and according to the supply and use balancing, estimate of final consumption in households in the national economic territory derives from an average of EPSS data and EEE data.

The *Resident Travel Survey* (ETR) by the INE has been also checked. This survey provides information on the resident expenditure in tourist packages and it is necessary to transform it into expenditure in Spanish economic territory by using the HBS territory-resident ratio of expenditure in this COICOP class

With respect to the following years, an extrapolation of the COICOP class 09.6 is made according to the weighted average evolution of HBS, EPSS, EEE and ETR data (weights are established according to the supply and use balancing).

5.7.3.10 10 Education

We must bear in mind that, in this function, the COICOP classification only includes educational services, without taking into account the costs associated to education, such as school transport, school meals, accommodation, books, school supplies, and the like. These are considered to be classified in the codes corresponding to transport services, hospitality and books, among others.

The preliminary estimates are based on the results of the HBS and on other sources of information, as described below for each of the groups of this function of the COICOP, like:

– *Statistics on Students Enrolled in Non-university Education* published by the Ministry of Education, Vocational Training and Sport (MEFPD), which provides the number of students enrolled in each course in schools in Spain by age and by public or private ownership of the school.

– *Statistics on Students Enrolled in University Education* published by the Ministry of Education, Vocational Training and Sport (MEFPD), which provides the number of students enrolled in each course in schools in Spain by age and by public or private ownership of the school in courses.

– *The figures of education in Spain.* Published by the Ministry of Education, Vocational Training and Sport (MEFPD), which provides the revenue for both university and non-university private education.

– *Statistics on the Financing of and Expenditure on Private Education* (FINYGAS) drawn up by the INE, which provides the structure of expenditure and revenue (by student) educational system (general or special) and educational level for both university and non-university education.

– *Statistics on scholarships and study aid.* Published by the Ministry of Education, Vocational Training and Sport (MEFPD), from which the average price can be estimated in post-compulsory non-university public education.

– *Statistics on prices in public universities ,* published by the Ministry of Education, Vocational Training and Sport (MEFPD), from which the average price can be estimated in university public education.

– *Survey on the Participation of the Adult Population in Learning Activities* (EADA) drawn up by the INE, which provides the average expenditure per person or household per non-formal Education activity conducted during the recent years, the percentages of said activities financed by the respondents themselves, or by any adult member of household, and the distribution of its contents, as well as the percentage of adult people who took part in one, two or more than two non-formal education activities by gender and age group.

The methods followed for estimating the groups of this division are described below.

In the COICOP group's 10.1 Pre-primary and primary education, 10.2 Secondary education, 10.3 Post-secondary non-tertiary education and 10.4 Tertiary education:

– For university private education and for non-university private education estimates come from the publication *The figures of education in Spain*, *Statistics on the Financing of and Expenditure on* Private Education, provides the structure of this expenditure by group of COICOP.

– For the public education, the publications on enrolment of the Ministry of Education, Vocational Training and Sport (MEFPD) have been fully used: the number of students enrolled in these educational levels is estimated; average expenditure per non-university student at each non-university educational level are calculated from the information about *Statistics on Scholarships and Study Aid*; average expenditure per university student at university level are calculated from the information about *Statistics on Prices in Public Universities.*

With respect to COICOP group 10.5 Education (not definable by level), we have considered and alternative estimate dividing it into two subclasses:

– Education received by the adult population, for which the Survey on the Participation of the Adult Population in the Learning Activities (EADA) data has been used.

– Education received by the minor population: it refers to support classes within the educational system at the lower levels of education (pre-primary, primary and secondary levels of education), that has been estimated by the HBS data.

Finally, in the group 10.5, a weighted average of HBS data and this alternatives estimate has been used, looking for a better fit with output side estimates in the product CPA 85 Education services.

With respect to the following years, an extrapolation of the expenditure in the COICOP 10 classes 10.1.0, 10.2.0, 10.3.0 and 10.4.0 are calculated according to the weighted average evolution of HBS data and the product of a volume index derived from the number of student enrolled by education level (*Statistics on Students Enrolled*) and a price index (CPI). Weights are established according to the supply and use balancing. On the other hand, value indices for COICOP class 19.5.0 are calculated according to the weighted average evolution of HBS data and the product of a volume index derived from *Population Figures* by age groups and a price index (CPI). Again, weights are established also according to the supply and use balancing.

5.7.3.11 11 Restaurants and hotels

The preliminary estimate is based on the HBS.

Furthermore, with regard to class 11.1.1 *Restaurants, cafés and similar establishments,* the SBS has been checked as an alternative source of information. It provides turnover figures for activities 56.10 *Restaurants and meals,* 56.21 *Provision of prepared meals at events,* 56.3 *Bars* and 47.99 *Other retail sales not made in establishments, or at stalls or markets.* This source suggests the results of the HBS were underestimated prior to the balance between supply and demand in Supply and Use Table, so a validation adjustment has been considered.

On the other hand, for the COICOP class 11.1.2 C*anteens,* the estimate derives fully from the results of the HBS.

Also, for group 11.2 *Accommodation services,* the SBS was also used as a contrast source, giving the turnover of activities 55.10 *Hotels and similar accommodation,* 55.20 *Holiday and other short-stay accommodation,* 55.30 *Camp sites and caravans sites* and 55.90 *Other accommodation.* The EPSS was also used as a contrast too, for the CPA product I55 (*Accommodation services*). These sources also suggest the results of the HBS were underestimated prior to the balance between supply and demand in Supply and Use Table, so a validation adjustment has been considered.

With respect to the following years, an extrapolation of the expenditure in the COICOP 11 classes 11.1.1 and 11.1.2 are calculated according to the weighted average evolution of HBS and SBS data (weights are established according to the supply and use balancing). On the other hand, in COICOP class 11.2.0 the extrapolation is made according to the weighted average evolution of HBS and EPSS data (weights are established also according to the supply and use balancing).

5.7.3.12 12 Miscellaneous goods and services

The preliminary estimates are based on the results of the HBS and on other sources of information, as described below for each of the groups of this function of the COICOP.

12.1 Personal care

In the case of COICOP class 12.1.1 *Hairdressing salons and personal grooming establishments*, the estimate is derived from the HBS. Furthermore, alternative source of information to the HBS was the EEE, which provides turnover figures for the activity 96.02 *Hairdressing and other beauty treatment* of NACE Rev 2.

In the case of COICOP class 12.1.2 *Electrical appliances for personal care*, the estimate is derived from the HBS too. Furthermore, alternative sources have been checked:

– The EPSC, which provides the percentage of revenue of the branch of retail trading activity corresponding with consumption in households.

– The journal Electromarket, which publishes an estimate of the sales of small household appliances.

In both cases, estimates of households consumption expenditure in electrical appliances for personal care is derived by applying the percentage of the turnover of the retail branches corresponding to household consumption to the available sales figures, adding VAT at the average rate in effect and distributing the figures obtained in classes 05.3.2 *Small electrical household appliances* and 12.1.2 *Electrical appliances for personal care* in proportion to the household consumption thereof according to the HBS.

Lastly, for class 12.1.3 *Other appliances, articles and products for personal care*, in addition to the HBS, it has been analysed the EPSC, which provides the turnover in retail activities on the product perfumes, cosmetics and toiletries, and the percentage of the turnover in these activities generated from purchases by final consumers.

For the CPA products 17.2 (Articles of paper and paperboard) and 20.4 (Soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations) of the COICOP class 12.1.3, estimates come from a weighted average of one derived from EPSC source and the HBS. For the rest of products of this COICOP class 12.1.3 only the HBS has been used.

With respect to the base year 2021 onwards, an extrapolation of the expenditure in the COICOP 12.1.1 class is calculated according to the weighted average evolution of HBS and EEE data (weights are established according to the supply and use balancing). On the other hand, for COICOP classes 12.1.2 and 12.1.3, the extrapolation is made according to the weighted average evolution of HBS and EPSC data (weights are established according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

12.2 Prostitution

The estimate of final consumption expenditure of households in this class is carried out according to sources and methods described in Chapter 3, section S.

12.3 Personal effects not mentioned previously

In the case of class 12.3.1 *Jewellery, clocks and watches*, the estimate is derived from the HBS. However, alternative comparative sources have been analysed in order to contrast that figure.

– The EPSC, which provides the turnover in retail activities on the product watches, jewelry, photographic and optical equipment, and the percentage of the turnover in these activities generated from purchases by final consumers.

– The EEE, which facilitates the turnover of the activity 95.25 *Repair of watches and jewelry*.

For class 12.3.2. *Other personal effects*, the estimate is derived only from the HBS. Furthermore, the EPSC has been checked as alternative source of information. It provides the turnover in retail activities related to this COICOP class and the percentage of the turnover in these activities generated from purchases by households. VAT at the average rate in effect is added to this figure, as is the percentage of the turnover applying to the turnover in retail activities regarding purchases of homes to obtain an estimate of household consumer spending on these items. The results of the HBS related to other subclasses included in this class of the COICOP are added to this figure to supplement an estimate of household consumption in class 12.3.2.

With respect to the following years, an extrapolation of the expenditure in COICOP 12.3 class is made according to weighted average evolution of HBS and EPSC data (weights are established according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

12.4 Social protection

Estimates in social protection makes use, in addition to the HBS, of the "*Annual Report. The Elderly in Spain. Statistical Data from the State and the Autonomous Communities*" published by the Institute for the Elderly and Social Services (IMSERSO) within the Ministry of Social Rights, Consumer Affairs and 2030 Agenda, which provides the number of places in public, concerted and private nursing homes and the user economic contribution in each one of them (for private nursing homes, the report of "inforesidencias.com" is used to determine the economic contribution of the user). The homes for the elderly are also considered as collective dwellings and the number of places is also provided by the IMSERSO annual report.

Therefore, estimates of household final consumption expenditure in the CPA products CPA 87 (*Residential care services*) and CPA 88 (*Social work services without accommodation*) of COICOP class 12.4.0 come from the adjusted HBS data (which include expenditure of people residing in collective establishments).

With respect to the following years, an estimate on household final consumption in social protection is made from HBS data for individual dwellings and from an extrapolation of the expenditure of collective dwellings (nursing homes and homes for the elderly). The extrapolation is made with a volume index derived from the evolution of population with more than 80 years old (in case of nursing homes) and the evolution of population with more than 65 years (homes for the elderly), both from Population Figures, and price indexes (CPI) in this COICOP class. Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

12.5 Insurance

Estimates in each of the classes of this COICOP results from the estimation of the use of insurance services produced in the economy for each class of insurance, which it is carried out as described in chapter 3.

12.6 Financial services not mentioned previously

Estimates of class 12.6.1 *Financial intermediation services indirectly measured* (FISIM) is carried out according to the principles, sources and methods already described in Chapter 3.

In the case of class 12.6.2, use is made of:

– The information provided by the Central Bank on commissions and fees paid to financial institutions.

– The financial accounts of the institutional sectors, prepared by the Central Bank, which offer the stock of loans and deposits by institutional sector in the national economy.

Household spending on financial services directly charged by financial institutions is estimated as the product of the number of commissions and fees paid to financial institutions multiplied by the percentage of the stock of loans and deposits of households on the total stock of loans and deposits in the economy.

With respect to the following years, for COICOP class 12.6.1 sources and methods are already described in Chapter 3; for COICOP class 12.6.2, an estimate on household final consumption in other financial services is made every year with the same sources and methods.

12.7 Other services not mentioned previously

The estimate in this group of the COICOP is derived mostly from the HBS. However, alternative sources of information considered were:

– The EEE, which provides the turnover of legal activities (69.10 from NACE Rev. 2), real estate agents (68.31), photocopying, document preparation and other specialised office support activities (82.19), research activities (80.30) and other personal services not mentioned previously (96.09).

– The EPSS, which provides the turnover on mostly CPA products of this COICOP group and the percentage of the turnover in these activities generated from purchases by final consumers.

Finally, for the product CPA 67.1 (*Legal services)* of this COICOP group 12.7, the estimates derived from EPSS has been fully used. For the rest of products of this COICOP group 12.71 only the HBS estimation has been used.

With respect to the following years, an extrapolation of the expenditure in each COICOP 12.7 class is made according to the weighted average evolution of HBS, EPSS and EEEdata (weights are established according to the supply and use balancing). Finally, the distribution between the different products in each COICOP class is established according to the distribution in the previous year and the supply and use balancing in the concerning products.

5.8 NPISH final consumption expenditure

The *Non-Profit Institutions Serving Households* (NPISHs) sector (S.15) consists of nonprofit institutions which are separate legal entities, which serve households and which are private non-market producers.

Those non-profits entities that are government controlled are included in the *General Government* sector (S.13).

In the case of Spain, the NPISHs consists of the following main types of institutions that provide non-market goods and services to households:

- Unions and political parties.
- Churches and religious institutions. In the case of the Catholic Church the following categories of institutions are considered: Spanish Episcopal Conference, Institutes of Religious and Monastic Life, Secular Institutes, Associations of the Faithful (lay groups), Diocesan Seminaries (major and minor), priestly residences, parishes, diocesan Caritas, Manos Unidas (Campaign Against Hunger), Pontifical Mission Societies, etc.

  Exceptions include educational centers (Kindergartens, Schools, Universities, Colleges, Junior Colleges, Faculties of Theology, etc.).
- Federations and Associations that are not controlled by the General Government and are non-market producers and economically significant.
- Professional Associations, Associations of Parents of Pupils (AMPAS), Consumer Associations, Guilds and others.

The *final consumption expenditure* of NPISH, which is considered *individual consumption*, includes the value of goods and services produced by them, which are neither capital formation for own use nor household or other units spending, as spending on goods and services produced by market producers that are supplied to households for their consumption as social transfers in kind.

However, with the currently available statistical information it`s not possible to distinguish whether a particular good or service purchased by an ISFLSH, has been used as intermediate consumption of the unit or has been supplied to households, without any transformation, for their consumption. Since the purpose of purchasing goods and services is mostly intermediate consumption, the option of recording all in that transaction has been chosen. Thus, the non-market production increases by the same amount in which increased intermediate consumption (by the unchanging part), not recording a change in final consumption expenditure for any purchase of products to supply to households as social transfers in kind. This way of recording has no impact on the calculation of final consumption expenditure of NPISHs and there is no duplicity with the households' final consumption expenditure.

Moreover, revenue from the sale of their other non-market products are not economically significant and they are recorded along with revenues from market production in this kind of production, due to the difficulty to distinguish them.

The sources and methods used in estimates of NPISH aggregates are described in chapter 3 section S.

Finally, the distribution of the final consumption expenditure by products is performed using the distribution of the production by products described in the ISFLSH industries of the chapter 3 section S and subtracting market sales from such output product by product.

5.9 Government final consumption expenditure

The *final consumption expenditure* of the *General Government* consists on the expenditure made by institutional units that integrate this sector in the acquisition of goods and services used to meet individual needs directly or the collective needs of the community members.

This expense includes two categories:

– The value of goods and services produced by the general government itself does not constituting own-account capital formation or sales.

– Purchases of goods and services are made by the general government. Those goods and services are produced by market producers and supply to households, without any transformation, as social transfers in kind.

In the Spanish case, the *General Government* sector is divided into four sub-sectors.

Estimates of the components of final consumption expenditure of each sub-sectors come from the General Government Accounts, prepared by the Audit Office.

Within General Government sector, depending on the level of government controlling the unit, the units may be included in sub-sector S.1311 (Central government), S.1312 (State government), S.1313 (Local government) or S.1314 (Social security funds).

Estimates of the components of final consumption expenditure made by General Government come from the General Government Accounts, prepared by the Audit Office.

The distribution of the final consumption expenditure by products is performed by distributing the output of the General Government sector units by products as described in chapter 3. In a similar way, using the information of the functional classification for groups and NACE codes of the public companies, a distribution by products is carried out for market output and payments for non-market output.

In the specific case of the production for own final use, this is distributed in construction, software and research and development following the breakdown of that production included in the General Government Accounts; similarly, social transfers in kind are broken down in medicine, education, health and social services products according to the details of such payments offered in the General Government Accounts.

Starting from the distribution by products of the transactions described above, the breakdown of the final consumption expenditure by products is obtained through the following accounting identity product-to-product:

$$GFCE = P.3 = P.1 - P.11 - P.12 - P.131 + D.632$$

Below is a description of the coverage for each subsectors of the General Government sector.

5.9.1 CENTRAL GOVERNMENT SUBSECTOR (S.1311)

The Central government includes all administrative departments of the state and other central agencies whose competence extends normally over the whole economic territory, with the exception of social security units. In Spain, this sub-sector includes:

- "The State", which comprises:

– The Administración General del Estado (AGE, -General Administration of the State). Its organisation and functioning is laid down in the Law 6/1997, of 14 April. The AGE is organised functionally into ministerial departments each with its own heading in the Presupuestos Generales del Estado (PGE, - General State Budget-).

– The constitutional bodies with distinct sections in the PGE (Casa de su Majestad el Rey -Royal Household of His Majesty the King-; Cortes Generales -Parliament-; Tribunal de

Cuentas -Court of Auditors-; Tribunal Constitucional -Constitutional Court-; Consejo de Estado -Council of State-; and Consejo General del Poder Judicial –General Council of the Judiciary-).

– Funds without legal personality attached to the State, included in Article 2.2 of the General Budget Law (GBL) (16).

- The "Central Government Bodies"

Which depend on "the State", include the bodies with separate legal personality and with the consideration of government units for national accounting purposes. The diverse legal personalities are agencies, self-governing bodies, consortia, other public organisations, corporations and foundations. They are also comprised Funds not included in Article 2.2 of the GBL.

5.9.2 STATE GOVERNMENT SUBSECTOR (S.1312)

The State government sub-sector consists of the governing bodies of the regional governments (Autonomous Communities), the regional administrative agencies and other units. The latter group includes the universities in each region and, also, those corporations which are non-market producers. The institutional units included in sub-sector S.1312 are the following:

– The governments of each of the 17 regions, together their legislative and other bodies set out in their Statutes of Autonomy, and which are incorporated into their budgets, including, where applicable, their dependent funds without legal personality.

– The public universities dependent on regions.

– Other bodies dependent on the regions with separate legal personality and which have the consideration of public administrations for national accounting purposes: agencies, self-governing bodies, consortia, other public organisations, corporations and foundations.

5.9.3 LOCAL GOVERNMENT SUBSECTOR (S.1313)

Local government sub-sector comprises local authorities (municipal, provincial and island), associations and groupings of municipalities, autonomous cities (Ceuta and Melilla) and the independent administrative and similar bodies reporting to them. This sub-sector comprises the following institutional units:

– Local authorities regulated under the Local Rules Act (Ley 7/1985), of 2 April 1985, or recognised by the regions under their Statutes: Municipalities, Provinces, Islands, Metropolitan areas, Groupings of municipalities, Districts and other entities comprising several municipalities and entities whose scope is below municipal level. This sub-sector also includes the Autonomous cities of Ceuta and Melilla.

– The bodies dependent on the aforementioned Local authorities, with separate legal personality and the consideration of government bodies for national accounting purposes.

5.9.4 SOCIAL SECURITY FUNDS SUBSECTOR (S.1314)

Social security funds sub-sector includes the institutional units of a legal nature and with diverse territorial scope that undertake functions relating to the provision of social benefits. The units performing social security functions financed through general taxation (essentially healthcare services) are classified together with the units to which they report in the Central government, State (regional) government and Local Government sub-sectors, whereas the units **performing social security functions** financed through social security contributions are classified in the Social security fund sub-sector. This sub-sector comprises the following institutional units:

Entidades Gestoras y Servicios Comunes de la Seguridad Social (Social Security Management Bodies and Common Services).

The former are public bodies with their own legal personality set up for the management and administration of benefits awarded by the Social Security system. The common services are created to ensure administrative coordination and for the performance of auxiliary and complementary management functions. They comprise the following units:

- Instituto Nacional de la Seguridad Social (INSS, -National Social Security Institute-), the management entity that deals with the management and administration of the financial benefits of the Social Security System.

- Instituto Nacional de Gestión Sanitaria (INGESA, -National Public Health Institute-), the management entity that deals with health benefits in the cities of Ceuta and Melilla and the performance of other activities required for the normal functioning of its services.

- Instituto de Mayores y Servicios Sociales (IMSERSO, -Institute of Social Services and the Elderly-), the management entity dealing with the Social Services supplementing the benefits of the Social Security system, and which manages issues relating to the elderly and dependent persons.

- Instituto Social de la Marina (ISM, -Social Marine Institute-), the management entity handling the Special System for Seafarers.

- Tesorería General de la Seguridad Social (TGSS, -General Treasury of Social Security-), a common service responsible for managing the funds and financial administration of the Social Security system, applying the financial solidarity and single till principles.

- Mutuas de Accidentes de Trabajo y Enfermedades Profesionales de la Seguridad Social (MATEPSS, -Mutual Funds for Work Accidents and Occupational Illnesses of the Social Security system-). They are entities that collaborate with the Social security system and operate under the guidance and supervision of the Ministry of Labour and Social Economy. Their main function is to manage "professional contingencies": work accidents and occupational illnesses.

Servicio Público de Empleo Estatal (SPEE: State Public Employment Service).

This is an autonomous central government body, currently a division of the Ministry of Labour and Social Economy, responsible for the management, development and monitoring of Employment Policy programmes and measures.

Fondo de Garantía Salarial (Wage Guarantee Fund, FOGASA).

This is an autonomous administrative body attached to the Ministry of Labour and Social Economy and set up under Article 31 of the Labour Relations Act, of 8 April 1976 (Ley 16/1976), with the primary purpose of instituting a guarantee for wage claims in the event of employer insolvency.

5.9.5 EXISTENCE AND CLASSIFICATION OF SPECIFIC UNITS

- Non-profit institutions (NPI)

Non-profit institutions (NPIs) are analysed when the government authorities are represented on the board (their governing body, "Patronato"). NPIs whose boards are controlled by government representatives and whose main source of funding comes from government are classified into the General Government sector (S.13). Criteria for considering the public control of these units are described in ESA 2010 20.13§. In some cases several indicators are considered to determine the public control of the unit.

Depending on the number of representatives on the board of each level of government, these units are classified as S.1311, S.1312 or S.1313. NPIs classified as S.13 are mainly foundations and consortia (composed of units of several General Government authorities of the same level or of different levels). In the General government list, these NPIs are included at the level of government on which they depend.

- Quasi-corporations

There are no quasi-corporations in the General government sector.

- Infrastructure companies

Public infrastructure companies are classified within or outside the General government sector, tending towards the criteria outlined above. We can distinguish between:

– Companies that make public investments in the name and on behalf of government authorities, with no responsibility for infrastructure management and financed by the government. These units are included in sector S13.

– Companies that make investments for their own account and manage this infrastructure, obtaining revenues from it. In these cases, it is considered the units have decision-making autonomy and the market test is run to determine their classification. Sales taken into account are those which accomplish the condition of economically significant prices ruled in ESA 2010 20.19§:

a) when the units are considered ancillary to the General government, they are directly classified in S.13.

b) when the prices are obtained from the Budget, the companies are included in S.13, in the sub-sector which controls the unit, except when the public unit competes with private ones through a tender.

c) when prices are obtained from the private units and consumers are free to purchase the good or service provided, the companies are included in S.11 if they met the ratio sales/costs of production.

Ratio data of the main infrastructure companies classified in Non-financial Corporations Sector (S.11) are provided in the questionnaire on liabilities of Public Corporations submitted to Eurostat at the end of each year, which includes some Railway, Roads, Metro, Ports, Airports and Public utility companies.

- Universities, schools, Public TV and radio, Public hospitals

Public units such as broadcasting companies, schools, universities and hospitals are fully integrated within the General government sector (S.13) because they are primarily funded

by public transfers from the government to which they belong, so they do not fulfil the market test.

- SPV

Fondo de Amortización del Déficit Eléctrico, FADE (- Electricity Deficit Amortization Fund -). The FADE was set up under Royal Decree-Law 6/2009 of 30 April 2009 adopting certain measures in the energy sector and is classified under the General government sector, in the Central government sub-sector. This legislation provides that settlement-related electricity system deficits give rise to financial claims consisting of the right to receive a portion billings from the consumers of subsequent years until those claims are satisfied in full. To finance these deficits, the related financial claims can be assigned to a FVC, these claims will be paid by electricity companies to FADE during the next 15 years. The liabilities of the FVC consist of the financial instruments issued via a competitive procedure which is also regulated by Royal Decree.

- Specific public units involved in financial activities

The main public units/groups of units involved in financial activities are:

– Instituto de Crédito Oficial (Official Credit Institute): public credit institution classified in the Financial corporations sector, in Deposit-taking Corporations except the Central Bank (S.122).

– Institutes of finance of the Autonomous Communities.: several agencies set up to manage the funding policy of the Autonomous Communities are currently classified in the General government sector, State government sub-sector (S.1312), except for the Catalan Institute of Finance which, given its specific features, is classified in the Financial corporations sector, in other financial intermediaries sub-sector.

– Venture capital companies/funds and public mutual guarantee and re-guarantee companies: in application of ESA 2010 (Chapter 2, units and groupings of units) and the Eurostat Manual on government Deficit and Debt (MGDD, 2014 edition. Part I.6, Entities having the features of captive financial institutions), some public financial institutions have been considered as entities with functions similar to captive financial institutions.

The main difference between these units and the private financial institutions is that they do not seek to obtain a market rate of return, but to carry out a limited range of activities for public interest and in narrow conditions set by the government controlling unit. In fact, these entities represent an alternative to performing these tasks directly by the government. To summarize, these entities do not have independence of action and it is the government who bears the ultimate risk of their activity. This lack of independence of action is the underlying reason for classifying these units in the government sector as clarifies ESA 2.20.

– Fund for the Orderly Restructuring of the Banking Sector (FROB).: created by Royal Decree-Law 9/2009, of 26 June 2009, with the purpose of managing the restructuring of credit institutions and helping to strengthen their equity. It is classified under the General government sector in the Central government sub-sector (S.1311).

– Deposit Guarantee Fund: unit whose main purpose is to guarantee deposits in credit institutions classified under the General government sector, Central government subsector (S.1311).

– Compañía Española de Seguro de Crédito a la Exportación (CESCE) and Consorcio de Compensación de seguros (CCS): CESCE and Consorcio de Compensación de seguros are

public units engaged in financial intermediation as a consequence of the pooling of risks mainly in the form of direct insurance or reinsurance. The CESCE is classified in the sector of financial institutions (S.12) sub-sector Insurance corporations (S.128). And the CCS is classified in S.13. All activities of CESCE made on behalf of general government are recorded in government accounts.

-Sociedad de Activos de Restructuración (SAREB) is defeasance structure created in 2012 by the Government as a result of the financial crisis as a Company with a majority of private investors. The objective, as stated by government, was to reach a participation of around 55% of private investors. The governance of SAREB follows a standard legal structure, with a Board of Directors that will represent the shareholders according to their participation. SAREB is supervised by Bank of Spain in accordance with Royal decree Law 1559/2012. In addition to this supervision, a multilateral committee will be incorporated with representatives from the Bank of Spain, CNMV, the Treasury, the Ministry of Finance and International bodies. SAREB is reclassified in the General Government sector with effect from 2012, under the Central Government subsector (S.1311).

- Other specific units

Some units (funds without legal personality), are not considered institutional units and are included in the relevant General government sub-sector.

5.10 Acquisitions less disposals of produced fixed assets

5.10.1 OVERVIEW

Gross fixed capital formation is made up of various assets, each estimated in a different way according to the available base data sources.

5.10.2 MAIN DATA SOURCES AND THEIR CONVERSION TO NATIONAL ACCOUNTS RESULTS

The sources of information available and used are listed below by assets and grouped by institutions.

5.10.2.1 Construction assets (AN.111 and AN.112)

Statistics from the Ministry of Transport and Sustainable Mobility:

- Surface area to be built according to destination
- Surface area for non-residential buildings to be built according to destination
- Average appraised value of free-price dwellings for up to five years old
- Value of free-price dwellings real estate transactions
- Total number of dwellings real estate transactions
- Construction Industry Structure Survey (EEC)

National Statistics Institute (INE):

- Specific module of the Statistics on Products in the Services Sector (EPSS): Legal, consultancy, advertising and other services. Architectural and engineering activities and related technical consultancy

General Council of the Notariat:

- Data on real estate sales/purchases

Ministry of Agriculture, Fisheries and Food:

- Capital Account for Agriculture (CEA)
- Economic accounts for Forestry

Other organisms:

- Costs for the basic building module (Building Institute of Valencia)
- Decommissioning costs of nuclear power stations (ENRESA)

5.10.2.2 Machinery and equipment (AN.113)

Statistics of the Directorate General of Traffic (DGT):

- Registrations by vehicle type
- Changes in ownership of vehicles

National Statistics Institute (INE):

- Industrial Products Survey (EIP)
- Structural Business Statistics (EEE)

Other organisms:

- Registrations by sale channel (Spanish Association of Automotive and Truck Manufacturers - ANFAC)
- Statistics on Spanish Foreign Trade (Customs Department of the Spanish Tax Agency)

5.10.2.3 Cultivated biological resources (AN.115)

Ministry of Agriculture, Fisheries and Food:

- Capital account for Agriculture
- Economic accounts for Forestry

5.10.2.4 Research and development (AN.1171)

R&D for market industries:

National Statistics Institute (INE):

- Statistics on R&D activities

- Specific module of the Statistics on Products in the Services Sector (EPSS): Information technology services
- Structural Business Statistics (EEE)

5.10.2.5 Mineral exploration and evaluation (AN.1172)

National Statistics Institute (INE):

- Structural Business Statistics (EEE)

5.10.2.6 Computer software and databases (AN.1173)

National Statistics Institute (INE):

- Specific module of the Statistics on Products in the Services Sector (EPSS): Information technology services
- Structural Business Statistics (EEE)
- International Trade in Services Survey

5.10.2.7 Entertainment, literary or artistic originals (AN.1174)

For the adjustment of Originals:

Ministry of Culture:

- Statistical Data Exploitation of Intellectual Property Rights managed by the Management Entities

Bank of Spain:

- Legal interest rate

For other assets:

National Statistics Institute (INE):

- Specific module of the Statistics on Products in the Services Sector (EPSS): Motion picture, video, television programme activities, sound recording and music publishing activities
- Structural Business Statistics (EEE)
- International Trade in Services Survey

5.10.3 DETAILED ESTIMATION METHODS BY AN CODE

Taking into account the dual nature of the GFCF as products and assets, estimation methods have been sought that take both perspectives into account. In this way the bridge matrices, both from products to assets and from assets to products, have been extensively revised, considerably improving the estimates of assets and products of the GFCF.

The matrix from products to assets is used for the part of the GFCF estimated by product (breakdown of asset AN.113). And the bridge matrix of assets to products is used for the part of the GFCF estimated by asset (AN.111, AN.1121, AN.1122, AN.1123, AN.1151, AN.1152, AN.1171, AN.1172, AN.1173 y AN.1174).

The gross fixed capital formation is valued at purchasers' prices including installation charges and other costs of ownership transfer.

In this section it will be described the methodology used in estimating acquisitions less disposals of fixed assets by asset code. An original level estimation was calculated and then entered into the SUT balancing process.

Disaggregation by type of asset

Although the level of aggregation of the released information is AN_F6 in accordance with ESA requirements, the working aggregation level by type of asset is the following:

AN.111 Dwellings

AN.1121 Buildings other than dwellings

AN.1122 Other structures

AN.1123 Land improvements

AN.1131 Transport equipment: Vehicles, Ships, Railways, Aircraft, Other transport equipment.

AN.11321 Computer equipment

AN.11322 Communications equipment

AN.1139 Other machinery and equipment

AN.114 Weapon systems: Armored vehicles and tanks, Ships, ICT equipment, Aircraft, Other weapons systems

AN.1151 Animal resources yielding repeat products

AN.1152 Tree, crop and plant resources yielding repeat products

AN.1171 Research and development

AN.1172 Mineral exploration and evaluation

AN.1173 Computer software and databases

AN.1174 Entertainment, literary or artistic originals

AN.1179 Other intellectual property products

5.10.3.1 Dwellings (AN.111)

This asset, like AN.1121 and AN.1122, is estimated by components according to the available information sources: new construction, expenditure on acquisition of assets and major improvements therein. In each component, the corresponding taxes are taken into account.

Thus, an initial estimate of the asset is made, which is entered as input in the SUT and after an in-depth analysis of the imbalance by products, successive adjustments are made until the assets are defined and the products are balanced.

Initial estimate

New dwellings construction

It is estimated using data on the surface area to be built and appraised value of the square meter of dwellings that are less than five years old. These data are taken at regional level. On the surface area it is understood that the land is not included and an adjustment is made in the prices, which is estimated to be the part corresponding to the land. This value of the new dwellings includes the commercial premises on the ground floor of the buildings, which are part of asset AN.1121.

Once the value of the new dwelling is calculated, the associated taxes (documented legal acts-AJD- and VAT) are added, which have different percentages depending on region (Autonomous Community).

Expenditure on the purchase of dwellings

They cover the costs of purchasing a new or second-hand dwelling (notary, agency and registration), engineering and architectural services, real estate services, and taxes on these costs. The fees of notary, agency, registration and AJD tax per transaction are multiplied by the number of real estate transactions. The tax on capital transfers (ITP) and real estate services are applied to the value of the free-price dwelling transactions of each Autonomous Community. Finally, for engineering and architectural services the specific module of EPSS is used, which selects the turnover of a product type as part of this asset.

Improvements and renovations to dwellings

This data is estimated jointly for AN.111, AN.1121 and AN.1122, as it is based on a total data which is subsequently distributed among the three assets.

The starting data is the output for product F43 (specialized construction work) in the economy, from which it is necessary to estimate what corresponds to improvements that increase the service life of the assets, that is, GFCF. The observed economy output is distributed according to the turnover for improvements, calculated from the EEC, for each type of construction (residential buildings, non-residential buildings and civil engineering). Once this output of the F43 product has been distributed for each type of construction, it is considered that only part of that output increases the service life of the asset (it is, therefore, GFCF).

Finally, after calculating the part of improvements for the two types of economy, the VAT estimate for the improvements produced by the observed economy that is estimated to be consumed by VAT exempt industries and households is added to each asset.

Final estimate

After obtaining the initial estimate, the data obtained is compared with that provided by the construction industry at the product level and other components of the SUT. After an in-depth analysis of the product imbalance, successive adjustments are made until the assets are defined and the products are balanced. In this way, adjustments are made to the products that make up the GFCF of construction assets that complement the information in the initial estimate.

As this process is carried out simultaneously for the products that make up the assets AN.111, AN.1121 and AN.1122, the explanation given here is also valid for these assets.

5.10.3.2 Buildings other than dwellings (AN.1121)

New buildings other than dwellings construction

It is based on data about surface area for non-residential buildings to be built according to destination from the Ministry of Transport and Sustainable Mobility. To obtain data in value, it is multiplied by the building costs also by type of building. Once the value of the new buildings has been obtained (applying a rate for the profit margin), the associated taxes have been calculated: the AJD of all industries and the VAT for the new construction of the VAT exempt industries.

To all this must be added the part of the commercial premises located in dwellings, including taxes (AJD and VAT).

Finally, the own-account gross fixed capital formation of the product F41002_4, non-residential buildings, is added. The own-account gross fixed capital formation of the rest of the construction products, F42 and F43, has been assumed to be already included in the estimate of assets.

Expenditure on acquisition of buildings other than dwellings

They comprise the same expenditure as asset AN.111, and the same values and percentages have been used for each type of expenditure. With regard to ITP, lacking data by Autonomous Community, it has been calculated applying a national average rate. Finally, the engineering and architectural services have been estimated with the special module of EPSS, as for the asset AN.111.

Improvements and renovations to buildings other than dwellings

They are estimated as explained in AN.111, when made jointly for assets AN.111, AN.1121 and AN.1122.

5.10.3.3 Other structures (AN.1122)

New construction

It is derived from turnover from construction activities according to type of work in the publication of the EEC, adopting the data relating to new civil engineering works. To this value is added the corresponding VAT for VAT exempt industries.

Expenditure on acquisition

Only engineering and architectural services are included in this asset. For its estimation the special module of the EPSS is also used.

Improvements and renovations to other structures

They are estimated as explained in AN.111, when made jointly for assets AN.111, AN.1121 and AN.1122.

In this asset AN.1122, are finally added the decommissioning costs of nuclear power stations, which are classified in product E39.

5.10.3.4 Land improvements (AN.1123)

This asset comprises both major land improvements and costs associated with the purchase and sale of land.

Land improvements are taken from the Capital Account for Agriculture and the Economic Accounts for Forestry. From the latter, data on forestry services is also included in the asset. Land improvement data in the Capital Account for Agriculture are at basic prices and therefore tax adjustment is applied to estimate them at purchasers' prices.

Land transfer costs are particularly significant for Spain. These costs of transfer of ownership consist of:

– Expenditures resulting from taking charge of the asset at the required time and place.

– Professional fees or commissions, such as the fees of inspectors, engineers, lawyers, assessors, etc., and the commissions paid to estate agents, auctioneers, etc.

– The taxes that the new owner has to pay for the transfer of ownership of the asset.

They are calculated on the basis of land transactions from General Council of the Notariat, with the prices of the services used also in the other construction assets.

5.10.3.5 Machinery and equipment (AN.113)

The products of this asset are calculated using a different method depending on the available data sources.

Once the initial estimate of the asset is made, it is used as input in the SUT and after an in-depth analysis of the imbalance by products, successive adjustments are made until the assets are defined and the products are balanced.

Motor vehicles (AN.11311)

AN.11311 asset is made up of two products, mainly the CPA C291 product (98%) and C292-C293 (2%).

Motor vehicles (CPA.291) are estimated using data from the DGT (Directorate General of Traffic) on registrations and ownership transfers by vehicle type, supplemented with registration data from ANFAC (Spanish Association of Automotive and Truck Manufacturers) by type of owner (this is used to be able to discount cars being bought by household, which are considered household final consumption expenditure).

Vehicle prices by type of vehicle are obtained through the quantity and value data both available in EIP and Vehicle Registration Tax. These prices are basic prices, so trade margins and VAT are added. Also costs of ownership transfers (fees and taxes) are included in the calculation.

Industrial products included in the Statistics on Spanish Foreign Trade as capital goods (commodity flow method)

Products included in this group are: C13, C24E41, C25E4, C262, C263T8, C271, C275, C27E1_5, C28, C292T3, C301E11, C302, C303, C304_9, C31 and C32.

The commodity flow method is based on the fact that the products that compose the assets of GFCF are obtained as a balance between the main components of supply and use estimated for capital use products. Therefore, the method lies in being able to identify within for each aggregate by products the part corresponding to the capital asset, since in this way the GFCF can be estimated as the difference between the supply of these capital products (output plus imports) and other uses than GFCF (mainly, exports). As practically all sources take into account sales or turnover data, purchased GFCF is initially obtained, later being added the own-account GFCF ($GFCF_{OWN}$):

$$\underbrace{OUTPUT_{SOLD} + M}_{Supply} = \underbrace{GFCF_{PURCHASED} + X}_{Use} \quad \Rightarrow \quad GFCF_{PURCHASED} = OUTPUT_{SOLD} + M - X$$

$$GFCF = GFCF_{PURCHASED} + GFCF_{OWN}$$

Information sources involved in the estimate of GFCF by products using the commodity flow method are:

– Goods Statistics on Spanish Foreign Trade (Customs Department of the Spanish Tax Agency).

– Industrial output by product (EIP).

– Turnover (EEE).

For the estimate of the purchased GFCF, imports (M) and exports (X) of capital goods from the data of the Goods Statistics on Spanish Foreign Trade are used, since it distinguishes capital goods from other goods.

Once this output to be sold, X and M for capital goods are calculated, GFCF purchased is obtained as it was indicated in the formula. Adding the own-account GFCF, total GFCF for each product is reached.

Once all products to be devoted to GFCF have been estimated using the aforementioned method, products (C263T8, C30111, C303, C304_9) for asset AN.114, weapons systems, are detracted from those.

Rest of the products in EIP not included in the Statistics on Spanish Foreign Trade as capital goods

Products included in this group are: C15, C16, C221_3, C222_9, C231, C232T4, C261, C3315, C3316 and C33E15_16.

For those CPAs the estimation method explained in point 2 cannot be applied due to the lack of information for exports and imports of capital goods. Therefore, for the estimation of these products, the variation index of its output according to EIP figures is used to evolve the GFCF data from the previous year without its own-account GFCF. Own final use output estimation for these products is added afterwards.

Rest of products

Finally, there are three products (M691, M692 and S95) within asset AN.113 that are not industrial and, therefore, information is not available either in the Statistics on Spanish Foreign Trade or in the EIP. They are estimated in an analogous way to the products in the previous section, but EEE turnover variation index is used for activities whose main product is one of the aforementioned three products.

5.10.3.6 Cultivated biological resources (AN.115)

This group of products includes the following:

– Variations in the number of livestock used in production over a number of years, such as breeding animals, animals for milk or wool production, or draft animals. Animals used for transportation, racing, or other purposes are also included. Animals used for meat are excluded, as is poultry.

– Variations in permanent plantations, such as vineyards, fruit trees, and in general all those that are cultivated for their fruit and the products obtained from them. Timber forests are not taken into consideration because they are considered works in progress.

Two different information sources are used for estimating figures in absolute terms:

- Agricultural crops, plants and changes in livestock used in production year after year from the Capital account for Agriculture (CCA).
- Changes in trees that are cultivated year after year estimated in the Economic accounts for Forestry.

The only conceptual adjustment made in those figures is for calculating them at purchasers' prices values instead of basic prices values for CCA data, thus, including taxes on products and trade and transport margins.

5.10.3.7 Research and development (AN.1171)

Estimation process: the R&D services have been estimated following the *ESA 2010 conceptual framework*, which defines the transactions and balancing items to be estimated, their valuation and accounting relations and interdependence. Furthermore, the guidelines established in the *Manual on measuring Research and development in ESA 2010* have been followed so as to guarantee reliability and comparability of the Member States estimates.

The estimation process distinguishes between market producers and non-market producers, as well as it is based on the balance of the *Scientific research and development services* product in the supply and use tables of the Spanish economy.

MARKET PRODUCERS:

The procedures followed for production estimation of *Scientific research and development services* carried out by market producers in the different industries, depend on the principal activity of these industries. Two groups were distinguished:

- Industries for which R&D is not the principal activity.

- Research and Development industry.

Industries for which R&D is not the principal activity (all NACEs except NACE 72)

The main statistical source to estimate the output of R&D services is the Statistics on R&D activities. Since 2002, this study has been prepared in coordination with the Technological Innovation in Companies Survey. The directory comprises a comprehensive section including companies, public bodies, higher education and non-profit private institutions, which can potentially develop R&D activities (either because they developed R&D projects in previous years, or because they have requested public funds for own research projects), and companies with over 200 employees; and it also comprises another random section drawn from the Central Business Register (DIRCE), providing a final sample of

approximately 52 000 companies (the sample is taken from companies with more than 10 employees).

The way in which the directory is compiled, allows establishing the hypothesis that R&D statistics collects all R&D activity carried out by units classified outside NACE 72. Statistics on R&D activities used in this section are Statistics on R&D Activities in the Business Sector and in the Higher Education Sector. The survey presents information on the activities recommended by OECD.

There are two types of output of R&D services carried out by all industries, except NACE 72. Their assessment is established in ESA 2010 in sections a) and b) of paragraph 3.83:

- Market output: it is valued at the revenues from sales, contracts, commissions, fees, etc.

- The output for use within the same enterprise: it is valued on the basis of the estimated basic prices that would be paid if the research were subcontracted. In the absence of a market for subcontracting R&D of a similar nature, it is valued as the sum of production costs plus a mark-up (except for non-market producers) for NOS or mixed income.

It is essential to distinguish between output for own final use and market output. Output for own final use is intended for the GCF of the industry itself. However market output may be intended for intermediate consumption, GCF or exports, which requires balance between supply and use.

In the case of market output, it is necessary to know the income from sales of different types of output by the units classified in these industries. The Structural Business Statistics (SBS) includes information regarding their turnover, services provided, other operation income, etc., but do not specify this income by type of activity of the company. It is therefore necessary to resort to alternative sources, which in this case are R&D statistics. In turn, output for own final use of R&D services shall be valued on the base of the basic prices that a producer will receive if the research were to be subcontracted, that is, adding a mark-up to output costs.

Output of R&D services for own final use of these industries is valued by costs. Generally speaking, output of R&D services of these industries would be equal to: Intermediate consumption plus Compensation of employees plus Other taxes on production minus Other subsidies on production plus Consumption of fixed capital plus Return to capital. Based on the information provided by the aforementioned R&D statistics, the estimation of each one of these components is that intermediate consumption and compensation of employees correspond to the total sum of current expenditure included under the heading of Expenses on internal R&D of R&D statistics regarding private higher education and companies sectors. R&D purchase is not included in current expenses, but within the GCF of the industry.

In order to avoid double accounting of the capitalized software for own final use that is constantly used so as to carry out R&D projects, each industry is adjusted in such a way that the previous current expenses are reduced in the total sum that results from multiplying the software for own final use estimated in the industry by the percentage that results from dividing the compensation of employees of R&D by the compensation of employees of the total industry. Also it should be noted that the total sum of other taxes on production is not considered significant for the R&D activities carried out by these industries and the estimation of other subsidies on production by industry is carried out based on other subsidies conceded by general government to the R&D.

Moreover, the unit responsible for R&D statistics has provided the item Expenses on internal R&D financed with Public Administration funds broken down into the following concepts: Grants of the different public administrations, Contracts with the different public administrations. The total subsidies conceded to the R&D have been distributed by industry depending on the importance that each registered grant has in each industry as compared with the total grants registered in R&D statistics of companies and higher education (universities and private centers).

The consumption of fixed capital of each industry has been calculated applying The Perpetual Inventory Method. The GFCF series are available since 1964, which was the first year in which R&D statistics were carried out in Spain. The breakdown by type of asset of capital expenditure is presented under the headings Equipment and instruments as well as Plots and buildings, for the period comprised between 1964 and 2002. From 2003 onwards, Purchase of specific R&D software is also registered as capital expenditure. The classification of Capital expenses by industry provided by the survey, is based on the corresponding classification of economic activities (NACE 74, NACE 93 and NACE 2009, respectively). The series have been linked in accordance with NACE 2009 (NACE Rev.2) which is the classification in force for the current industries in which the economy is classified.

As previously mentioned, production for own final use is valued as sum of costs and a 5 per cent return of capital is established for market output of R&D. In the first approach, the headings: contracts with public administrations and financing from other Spanish companies as well as financing from abroad, are considered income from sales financed with national funds.

Research and Development industry (NACE 72)

R&D output is the principal activity of the units classified in NACE 72. This industry uses R&D statistics and the Annual Survey of Services as its main source.

In order to avoid duplicity of the two main sources of information (Annual Survey of Services and R&D statistics that distinguish between market producers and non-market producers), firstly the units classified in the S.13 General Government sector are extracted from the sample. This allows obtaining the results corresponding to the market units whose principal activity is Research and Development.

Output for own final use is valued as the sum of production costs and assign 5% income to market output.

NON-MARKET PRODUCERS.

In the new accounting framework established by ESA2010, R&D production of the units classified in general government sector is considered in two different ways:

- Market production, registered as income for the sale of R&D. It is acquired by other units and then becomes part of the gross fixed capital formation of these units or of their intermediate consumption, if they are acquired with the objective of also producing R&D.

- Production for own final use, generator of gross fixed capital formation.

Besides these two productions, other residual non-market production appears in R&D. It is constituted by consumption of fixed capital coming from the amortization of fixed assets generated through the R&D produced and capitalized in the same unit in prior fiscal years. On the other hand, buying R&D from an external institution is also considered gross fixed capital

formation of the general government, except when bought by units whose main activity is R&D - for which they will still be considered intermediate consumption-.The capitalization of the acquired R&D asset also leads to its corresponding amortization during the following years, and therefore to an increase of consumption of fixed capital of the unit in question. In summary, under the ESA2010 perspective, R&D becomes capitalized.

In the case of Spain, the units that produce R&D on the part of the institutional sector of the general government can be grouped into three large scopes: public research institutions (PRIs), universities and public hospitals.

– Public research institutions (PRIs): They are institutions whose main activity is R&D production, therefore their activity has been assigned to the research and development (CNAE 72) industry. The Audit Office (IGAE) currently has the expenditure on R&D activities related with these units, which are annually registered in Public Administration Accounts under the classification of sub-functions of R&D expenditure. The main expenditure sub-functions of General government that led to R&D production were basic research, R&D related to defense and R&D related to economic affairs, all of which corresponds to the sub-sector of the Central Administration.

– Public universities: They are units whose main activity is providing higher educational services. Therefore, the activity related to R&D has been assigned to the education (CNAE 85) industry. In this case the main source of information have been R&D Statistics compiled by the INE. Moreover, budgetary settlements of public universities (with amounts distributed among the COFOG expenditure functions 01.4 basic research and 09.4 (higher education in National Accounts transactions) have been used as a contrast base. It is important to highlight that the majority of the units which were previously considered to belong to the General Government sector fit their activity within the group in which research programs are gathered. This is not the case of universities whose research is broad and can cover several divisions of this functional classification. In relation to this, it is worth mentioning that the R&D Statistics consider a classification by types of R&D (basic research, applied and experimental) and socio-economic objective (protection and improvement of human health, education, culture, etc.) which has allowed establishing a correspondence between these types of R&D activities and the COFOG expenditure functions. Specifically, the main expenditure sub-functions that led to R&D production in this category were basic research, R&D related to economic affairs, R&D related to the environment and R&D related to education developed by the Autonomous Communities sub-sector.

– Public hospitals: They are units whose main activity is providing health services. Therefore, the activity related to R&D has been assigned to the health activities (CNAE 86) industry in terms of National Accounts. As in the case of universities, the main source of information have been the R&D Statistics compiled by the INE. The main expenditure sub-function of the General government that led to R&D production in this category was R&D related to health developed by the Autonomous Communities sub-sector.

– Other units: In addition to the above three groups, there are public units classified in different industries.

– Taking into account that the non-market production is measured as the sum of costs, R&D production for own final use in Public Administrations is immediate when subtracting the amounts destined to software production for own use that have been estimated in the new accounting base and the income obtained from the sale of R&D in the market (transactions P.11 and P.131).

- Also, as it has already been mentioned, under the ESA2010 scheme, there is capitalization of R&D for own final use that will generate other non-market production in R&D (and therefore final consumption expenditure of the sector) constituted by the consumption of fixed capital coming from the amortization of fixed assets generated through the R&D produced and capitalized in the same unit. By employing a geometric depreciation function and an average lifespan of 10 years for this type of asset, there has been an estimation of the annual consumption of fixed capital series coming from amortizing R&D assets produced in previous years.

The own-account production of software is excluded from the estimates of own-account R&D also in non-market producers. The estimation process follows, as far as possible, the recommendations of the Eurostat "Task Force on Software Measurement" of June 2002, although it is true that its necessary adaptation to ESA 2010 has been carried out in its application.

In this regard, the new ESA 2010 states in paragraph 3.45 that "output for own final use (P.12) is valued at basic prices of similar products sold on the market. This production generates net operating surplus or mixed income. An example of this are the rental services of owner-occupied dwellings which generate a net operating surplus .If we do not have the basic prices of similar products, output for own final use should be evaluated based on production costs plus a margin (except for non-market producers) for net operating surplus or mixed income."

Therefore, the valuation of software production for own final use should be made, in the case of the General Government sector at the cost of factors, i.e., as the sum of intermediate consumption, compensation of employees, other taxes on production net of subsidies and consumption of fixed capital, all associated with software for own final use. It must be taken into account that the estimation made has obviated the amount that would correspond to other taxes on production net of subsidies, which would be quantitatively negligible.

For the estimation of the compensation of employees associated with software production, an estimation has been carried out, based on the results of the Labour Force Survey, of the percentage of total compensation of employees for each COFOG function which is dedicated to software production for own final use (use is made of the NACE-COFOG correspondence used in the preparation of the estimation of the general government sector aggregates by branch of activity in the Spanish National Accounts based on the Functional Classification of General Government Sector expenditure). This estimation was made in the following steps:

– The average was considered of the weight represented by the total of public employees who are engaged in occupations likely to include software programming over the total number of employees of the same.

– To that weight has been applied the percentage of their working time dedicated to the programming of software for own use, established by hypothesis.

As occupations likely to involve software programming, the following have been used:

- Advanced computer professionals.
- Intermediate computer professionals.

For the estimation of intermediate consumption, a first step is to estimate the number of jobs dedicated to software production for own final use by COFOG groups. To this end, we have applied to the total employment of each branch of activity of the general

government sector the proportion of compensation of employees used for the production of software for own final use of over the total of such transaction in each one of those branches (again use is made of the COFOG-NACE correspondence). Thus, the intermediate consumption is estimated by COFOG group, applying to the number of employees used for the production of software for own final use for each COFOG group, the ratio of intermediate consumption per worker in the industry programming, consultancy and other computer-related services; information services .

The estimation of consumption of fixed capital associated with software production is performed by applying to the estimated data of the number of jobs dedicated to software production for own final use by COFOG groups the consumption of fixed capital per worker in the industries corresponding to the general government sector.

The backward projection of the software production series of the General Government Sector since 1995 and its extrapolation was made from the trend in the weight of the output of the branch of activity 62-63 Programming, consulting and other computer-related services; information services (according to the National Classification of Economic Activities, CNAE 09) of the total output of the economy.

In summary, the software production for own final use in General Government's non-market units is estimated as sum of costs and disaggregated by COFOG groups, as described above. The estimated value of software for own final use in the COFOG groups of R&D (1.4, 1.5, ... , 10.8) is excluded from the value of the production for own final use of R & D initially estimated.

Finally, to finish measuring the impact of R&D production on the National Accounts and on the Gross Domestic Product (GDP), the R&D services bought from an external institution shall be considered. This is because under the previous ESA 1995 scope, they were entirely registered as intermediate consumption of General government, but they become part of the gross fixed capital formation of the sector in the new ESA 2010 accounting framework and therefore also leads to its own amortization.

The balance of the R&D service is determined by the following identity:

Output + Imports + Net Taxes = ID + FCE + GCF + Exports

Being: Net taxes: taxes less subsidies on products, ID: Intermediate Demand, FCE: Final Consumption Expenditure, GCF: Gross Capital Formation

The total output of the R&D service, the intermediate demand, the consumption expenditure and the GFCF are obtained from the information of the previous sections. In this case, net taxes on products refer to the VAT. It is estimated based on R&D purchases by the different units that carry out exempt transactions. Imports and exports of R&D services appear in International Trade in Services Statistics. Nevertheless, there is no one-to-one correspondence with product 72 of CPA 2008, Scientific research and development services. R&D statistics have been used in order to determine the total sum corresponding to this product. These statistics provide the purchase of external R&D services carried out in Spain and abroad. Moreover, it provides the internal R&D expenses financed with foreign funds.

Based on these three sources of information, the total sum of imports and exports of R&D services have been determined. The former identity is not verified after the incorporation of all transactions regarding the Scientific research and development services in the SUT. The imbalance is due to an excess of demand, lack of offer or the combination of both effects.

5.10.3.8 Mineral exploration and evaluation (AN.1172)

This transaction comprises the value of the expenditures relative to the exploration of oil, natural gas and mineral deposits, including all the costs incurred to make the project possible.

The main data source to estimate GFCF in mineral exploration and evaluation is Structural Business Survey. The own-account mineral exploration and evaluation is estimated as a sum of costs (applying ratios to intermediate consumptions and compensation of employees of the industries B) plus a mark-up for surplus (another ratio over the sum of costs). The rest of the asset is estimated as a proportion of the turnover of the industry B09, which is supposed to be the only industry that sells this kind of service.

5.10.3.9 Computer software and databases (AN.1173)

This asset includes computer programs, program descriptions, and supporting materials for both systems and applications software. The development and filling of databases intended to be used for more than a year, whether or not they are traded, are also considered.

The principal source of information used to estimate this type of expenditure was the specific module of the Statistics on Products in the Services Sector (EPSS): Information technology services. These statistics are drawn up by INE.

The information breakdown available makes it possible to estimate the portion of output intended for gross fixed-capital formation, following the recommendations of the Task force about the measurement of software.

Asset AN.1173 is made up by the products J582 y J62. For estimating this asset, commodity flow method is used.

In the case of this asset, thanks to the available data sources, the part of output with national destination can be identified, thus, not taking into account the exported output. Finally, as the used sources take into account sales or turnover data, firstly, purchased GFCF is obtained, adding up own-account GFCF ($GFCF_{OWN}$) to get the total value for this asset.

$$\underbrace{OUTPUT_{SOLD\,IN\,THE\,COUNTRY} + M}_{Supply} = \underbrace{GFCF_{PURCHASED}}_{Use} \Rightarrow$$

$$\Rightarrow \; GFCF_{PURCHASED} = OUTPUT_{SOLD\,IN\,THE\,COUNTRY} + M$$

$$GFCF = GFCF_{PURCHASED} + GFCF_{OWN}\,.$$

The information sources available for estimating this asset are:

- Turnover by 4-digit NACE and product in the Specific module of the Statistics on Products in the Services Sector (EPSS): Information technology services.
- Total turnover and 4-digit NACE turnover in EEE.
- Annual data for imports and exports of software and computers services products from the International Trade in Services Survey.

To estimate software products sold output with national destination, not including that meant to be exported, to be considered as GFCF, two assumptions are made in each CNAE:

– The proportion of output with national destination with respect to the total is the same for all the products it produces (national destination).

– From the different elements in which EPSS turnover is divided, only those that seem to be capital products are included in the estimation.

Once the concepts corresponding to capital products have been chosen in the EPSS data, these are disaggregated between output with national destination and output aimed to be exported with the same structure that those two destinations have in the turnover by NACE in the EEE. Thus, national destination output for capital products is obtained. Subsequently, imports of ECIS software products and computer services are added, obtaining the GFCF purchased at basic prices. To value it into purchasers' prices, the VAT paid by the VAT exempt industries is added. Through this adjustment, purchased GFCF is obtained correctly valued at purchasers' prices.

Finally, to achieve total GFCF, software products own-account capital formation is added. This own final use output is estimated following estimation method proposed in GNIC/015 rev.1 and its up-date GNIC/474 rev.1 documents.

It is calculated as a sum of costs: compensation of employees, intermediate consumption and gross operating surplus.

The compensation of employees (CE) is calculated by the number of employees, times the cost/hour per worker and hours worked per year. To calculate the cost/hour for groups 271 (Software and multimedia analysts and designers) and 272 (Specialists in databases and computer networks) of the National Classification of Occupations. CNO-11, a system is solved in which for the first equation it is assumed that the professionals of higher level are remunerated 1,2 times more than the average level. And in the second equation, having the average cost/hour in each industry, it is weighted with the occupation for each CNO in the industry. Labour Force Survey data for employees by CNO classification are used.

Intermediate consumption (IC) and gross operating surplus (GOS) are calculated using the ratios IC/CE and GOS/CE for industries with NACE 62+63 (Computer programming, consultancy and related activities; information service activities) and applied to the compensation of employees calculated in each industry with the method explained above.

Once the components are calculated, they are added up (CE+IC+GOS) and a part of it is assumed to be the estimate for the own-account software in each branch.

The method calculation for non-market units have been described in 'Research and development' heading.

5.10.3.10 Entertainment, literary or artistic originals (AN.1174)

This group of products includes films, sound recordings, manuscripts, tapes, etc., on which are recorded or which contain original theatre performances, radio or television programmes, musical works, literary or artistic productions, and so on. This output is measured by the price paid, in the case of sale; and if there is no sale by the basic prices of similar originals, the costs of production, or the current value of the expected future payments for its use in production.

Owing to statistical difficulties and difficulties in delimiting this type of output, as in former accounting series only the following types of product were considered:

– Production of cinematographic and video works.

– Production of literary works.

– Production of musical works.

This asset is made up then by three products: J59, J60 and R90. The estimate of this asset has two components.

On the one hand, the adjustment by royalties of the originals is calculated following the recommendations of document GNIC / 010 rev. 1. The value of investment in original entertainment, literary and artistic works was estimated being the basic information the flow of the rights of authors channeled through their own management companies, obtained from the Annual Report of the General Society of Authors of Spain (SGAE).

In more detail, the GNIC / 010 rev. 1 recommendations are applied when calculating this estimate. In Spain all these kind of intellectual property rights are managed by rights management agencies and these agencies provide an annual report of their royalties flows, singling out flows between different agencies. Therefore the document's recommended formula $W_j = H_j \cdot (1 + r_j - i_j)$ is used to calculate the gross fixed capital formation and its associated production, using a single year for the growth rate of royalties (r) and the interest rate (i).

The rights management agencies considered are:

CEDRO: Books, magazines and other publications rights.

VEGAP: visual creators (paintings, drawings, comics, artistic performances, photographies, video-art, etc.

AIE: Performers (musics).

AISGE: Actors, dancers, scene directors, etc

AGEDI: phonogram producers (audio recordings and music videos).

EGEDA: Audio visual producers.

SGAE: Music composers and editors.

DAMA: Film and television writers and directors.

On the other hand, the rest of the asset, thanks to the available data sources, the part of output with national destination can be identified, thus, not taking into account the exported output. Finally, as the used sources take into account sales or turnover data, firstly, purchased GFCF is obtained, adding up own-account GFCF ($GFCF_{OWN}$) to get the total value for this asset.

$$\underbrace{OUTPUT_{SOLD\,IN\,THE\,COUNTRY} + M}_{Supply} = \underbrace{GFCF_{PURCHASED}}_{Use} \Rightarrow$$

$$\Rightarrow \; GFCF_{PURCHASED} = OUTPUT_{SOLD\,IN\,THE\,COUNTRY} + M$$

$$GFCF = GFCF_{PURCHASED} + GFCF_{OWN}\,.$$

The information sources available for estimating this asset are:

- Turnover by 4-digit NACE and product in the Specific module of the Statistics on Products in the Services Sector (EPSS): Motion picture, video, television programme activities, sound recording and music publishing activities.
- Total turnover and 4-digit NACE turnover in EEE.
- Annual data for imports and exports for audiovisual products from the International Trade in Services Survey.

To estimate sold output by the products included in this asset with national destination, not including that meant to be exported, to be considered as GFCF, two assumptions are made in each CNAE:

– The proportion of output with national destination with respect to the total is the same for all the products it produces (national destination).

– From the different elements in which EPSS turnover is divided, only those that seem to be capital products are included in the estimation.

Once the concepts corresponding to capital products have been chosen in the EPSS data, these are disaggregated between output with national destination and output aimed to be exported with the same structure that those two destinations have in the turnover by NACE in the EEE. Thus, national destination output for capital products is obtained. Subsequently, imports of ECIS audiovisual products are added, obtaining the GFCF purchased at basic prices. To value it into purchasers' prices, the VAT paid by the VAT exempt industries is added. Through this adjustment, purchased GFCF is obtained correctly valued at purchasers' prices.

Finally, to achieve total GFCF, audiovisual products own-account capital formation is added.

5.10.3.11 Other intellectual property rights (AN.1179)

This asset has been considered not numerically significant, because after an exhaustive analysis, it was concluded that all intellectual property assets, at least the most relevant and for which some information was available, were already included in the previous sections.

5.10.4 DETAILED ESTIMATION OF OWN-ACCOUNT GFCF

The method is based on the calculation of output for own final use (OFU) as sum of costs plus a margin for the gross operating surplus, disaggregating by type of product and industry. This estimation of own-account GFCF (excluding computer software and entertainment, literary or artistic originals) is applicable for all NACEs.

First, it has been decided which products have output for own final use and in which industries, since in the case of some products their output for own final use was limited to certain industries, while others have widespread this type of output.

Next, the chosen products have been grouped into different groups, depending on the jobs that are responsible for developing these products with which they will work. There are 4 groups in total, and each one contains the following products (classified by the Classification of Products by Activity, CPA 2.1):

- **Construction**: 41002+41004, 42, 43
- **Machinery and transport**: 27, 28, 291, 292+293, 301, 302, 303, 31, 33
- **ICT**: 263+264+265+266+267+268, 95
- **Intellectual property**: 59, 60, 90

This aggregation is due to the impossibility of differentiating exactly which products each type of occupation produces. Therefore it seems advisable to create groups of products and then divide the production of each group among its different members.

Then the occupations for each of the groups have been decided based on the National Classification of Occupations (CNO-11), that is, workers who dedicate at least a part of their time to produce their own final use output. While in the first two groups, both occupations of skilled and unskilled workers are chosen, in the last two groups only occupations of skilled workers are chosen. The occupations for each group are (in italics the occupations considered qualified):

Construction:

248 (Technical architects, surveyors and designers)

712 (Bricklayers, stonecutters, cutters, styling and stone engravers)

751 (Construction and related electricians)

960 (Labourers in Mining and Construction)

Machinery and transport:

246 (Technical engineers (except agricultural, forestry, electrical, electronic and ICT))

740 (Mechanics and machinery adjusters)

752 (Other installers and repairers of electrical equipment)

ICT:

753 (Installers and repairers of electronic and telecommunications equipment)

Intellectual property:

293 (Creative and interpretative artists)

383 (Technicians in audiovisual recording, broadcasting and telecommunications)

Finally, a representative industry of each group of products has also been chosen, with which the necessary ratios will be calculated in the estimate. According to the National Classification of Economic Activities (CNAE-2009), the chosen industry for each group of products are the following ones:

Construction: 41+42+43

Machinery and transport: 28

ICT: 61

Intellectual property: 90

Initial estimation

Once all of the above has been decided, own final use output is calculated as sum of costs (compensation of employees plus intermediate consumption) plus a profit margin to adapt the valuation to basic prices. The following describes how each component is estimated:

Compensation of employees (COE).

For this component they are used as base data:

Labor Force Survey (LFS): For the number of workers in each industry dedicated to the output of the selected products, the estimates of this survey are used, aggregated by type of occupation of the CNO-11 worker and industry of the company (CNAE-2009).

Wage Structure Survey (EES): For the average compensation of employees of each occupation (ACOE), data from both the annual and the four-year version of this survey are used. The four-year version has a greater disaggregation, since it provides information on the average annual earnings per worker by main subgroups of CNO-11 occupations, which is quite close to the level of occupations chosen in the EPA data. As this information is only available every four years, the annual EES is used to update it annually, which gives data at the level of main occupational groups CNO-11, calculating their variation rates and applying them to the subgroups.

Each of the occupations is assigned a weighting, which represents the percentage of employed persons engaged in own final use output. Qualified occupations have a weighting of 0.1 and unskilled ones of 0.2, since the latter are considered to take more time in the production process of own final use output. In this respect a difference arises between the main industries and the others, since the weighting in the main branches in the non-qualified occupations is 0.1. This is like this because being the main industry it is assumed that it is mostly dedicated to produce, but not for itself, that is, that it dedicates less resources to own final use output.

Once both the weighted number of workers and the average compensation of employees by type of occupation CNO-11 are taken into account, the compensation of employees is calculated as the product between these two variables, always taking into account which occupations were chosen in the output of each group of own final use output:

$$COE_{i,g}^{UFP} = Weight_i^{CNO} * Workers_i^{CNO} * ACOE^{CNO}$$

$$where \begin{cases} i \rightarrow \ industries\ of\ the\ economy \\ g \rightarrow \ groups\ of\ product \end{cases}$$

Intermediate consumption (IC).

The next estimate is the cost of intermediate consumption used in the own final use output. As there is no information about it, the assumption made is that the productive structure of a product does not depend on the industry that produces them, but on the product itself. That is, the ratio between the different production costs is the same regardless of the industry. Under this assumption, the structure of the main industry chosen for each product group is selected, since it is supposed to be the most representative of the production process of those products.

To calculate this ratio the variables used as base data are Intermediate Consumption (IC), Intermediate consumption of work performed by other companies (IC_WOC) and Compensation of employees (COE) calculated according to the intermediary system described in chapter 3 (Transition from private accounting and administrative concepts to ESA2010 national accounting concepts), whose data come mainly from the Business Structural Survey by industry (EEE). The ratio calculates the proportion of the net

intermediate consumption of the work performed by other companies regarding the compensation of employees for the main industry of each product group:

$$Ratio\ IC_g = \frac{IC_{p_g}^{EEE} - IC_{WOC}{}_{p_g}^{EEE}}{COE_{p_g}^{EEE}}$$

$$where \begin{cases} p_g \rightarrow\ main\ industry\ of\ the\ group\ of\ products\ g \\ g \rightarrow\ groups\ of\ products \end{cases}$$

Once this ratio has been calculated for each group of products, the estimate of the share of intermediate consumption in the own final use output, is simply the product between the ratio and the compensation of employees previously calculated for each industry within each group of products:

$$IC_{i,g}^{OFU} = Ratio\ IC_g * COE_{i,g}^{OFU}$$

$$where \begin{cases} i \rightarrow\ industries\ of\ the\ economy \\ g \rightarrow\ groups\ of\ product \end{cases}$$

Margin over Gross Operating Surplus (GOS)

As with intermediate consumptions, there is no information about the margin over GOS within the output for own final use, so it is solved in the same way and under the same assumptions. In this case the ratio is calculated with the variables Intermediate Consumption, Compensation of employees and output without subsidies calculated according to the intermediary system described in chapter 3 (Transition from private accounting and administrative concepts to ESA2010 national accounting concepts) of the GNI Inventory Revised, whose data come mainly from the Business Structural Survey by industry (EEE). Ratio is calculated as output without subsidies minus intermediate consumption (estimate of GOS in EEE) divided by compensation of employees for the main industry of each product group:

$$Ratio\ GOS_g = \frac{OUTPUT\_WITHOUT\_SUB_{p_g}^{EEE} - IC_{p_g}^{EEE}}{COE_{p_g}^{EEE}} - 1$$

$$where \begin{cases} p_g \rightarrow\ main\ industry\ of\ product\ group\ g \\ g \rightarrow\ groups\ of\ products \end{cases}$$

The value of the margin over GOS of the output for own final use is estimated as the product of this ratio and the ratio of compensation of employees previously calculated for each industry within each group of products:

$$GOS_{i,g}^{OFU} = Ratio\ GOS_g * COE_{i,g}^{OFU}$$

$$where \begin{cases} i \rightarrow\ industries\ of\ the\ economy \\ g \rightarrow\ groups\ of\ product \end{cases}$$

Finally, the initial estimate of the output for own final use is the sum of the three components, being disaggregated by industry and product group:

$$OUTPUT_{i,g}^{OFU} = COE_{i,g}^{OFU} + IC_{i,g}^{OFU} + GOS_{i,g}^{OFU}$$

$$where \begin{cases} i \rightarrow \ industries\ of\ the\ economy \\ g \rightarrow \ groups\ of\ product \end{cases}$$

Control phases

Although the original data of "Work done by the company for its assets" of the Structural Business Surveys cannot be used directly in the estimation of the output for own final use, they are taken into account as control of the estimated data in two different ways:

- **Control 1**: they establish a minimum value for own final use output. As the problem of such data is valuation, and company accounting is undervalued with respect to national accounting, this first control assumes that the estimated data cannot be under any circumstances below the data of the surveys. In order to make this comparison, the rest of the products with own final use output (software, R&D, Mining Exploration) are added to the estimate described above to find the total output for own final use, since the data of the surveys include all that kind of production.

- **Control 2**: they give information about the order of production between the different industries. For this, industries are ordered from highest to lowest output for own final use, and compared with the order obtained with the variable "Work done by the company for its assets".

Control 1 establishes that it is mandatory, so that in the industries that fail to comply with it, an adjustment is made to weights on the percentage of time that workers spend on the own final use output.

Once the adjustments due to control 1 have been made, control 2 is executed. This is taken as a guide. When making the comparison, a greater aggregation of industries than the level of work is done. The adjustments derived from this control are also made in the weights on the percentage of time spent in production of own final use

Final estimation

After the control phases, the calculation process is carried out again by adding all the changes in the weights. In this way the final estimate of the output for own final use by industries and work groups is obtained.

The last step is the distribution of the output for own final use by products. For this, a matrix with zeros and ones is used, indicating which products are produced by which industries within each product group. In this way, the output for own final use of each group of products in each industry is distributed among the products that make up that group and which are produced in such industry. In the absence of information, it has been assumed that it is distributed proportionally.

5.10.5 TREATMENT OF TRANSACTIONS IN EXISTING GOODS

The cases established in the list are fulfilled, some examples below of each one of them:

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:* In the

case of second-hand vehicles or buildings, only transfer costs are considered such as taxes, agency costs, notary and fees.

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:* The estimation of imports and exports referring to the imputed rent is carried out through notional 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:* The method used for this estimate of GFCF, commodity flow, guarantees its compliance.

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:* The percentage destined for households and companies is estimated in each flow in order to be able to make the most accurate estimate.

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:* The method used for estimate acquisition less disposals of a valuable, commodity flow, guarantees its compliance.

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:* The use of the information provided by the Audit Office guarantees such compliance.

5.11 Additions to the value of non-produced non-financial assets

Non-produced assets are non-financial assets that come into existence by means of processes other than production. They may be either tangible or intangible. Only the major improvements in non-produced tangible assets (especially land) and the costs associated with the transfer of these assets (such as land and patents) are included, while the acquisition of these assets is excluded.

In relation to land, on one hand, expenditure associated to the transfer of its ownership is evaluated, which would include: the margin of the real estate intermediaries, the fees of the notary, land registration taxes, expenditure linked to preparation and cancellation of mortgages. The estimates for these concepts are made from the sources of information available, which are land registry sources and economic statistics about the transactions undertaken involving real estate assets. On the other hand, expenditure associated with major improvements of land is also calculated.

5.12 Changes in inventories

Inventories are classified in three categories:

- Finished and work-in-progress goods
- Goods for resale
- Raw materials and other supplies

Products added to the inventories of finished goods less products withdrawn from the inventories of finished goods are included in P.1.

Finished and work-in-progress goods are together because the sources for this information do not separate between those two categories.

The correspondence between the information collected in the questionnaires and the one asked following the General Accounting Plan is described in the table below:

Correspondence between surveys and General Accounting Plan

INVENTORIES	**Questionnaire**		**General Accounting Plan**	**Relationship**
	At the end of the year	**At the beginning of the year**		
1. Goods for resale	C31_1	C31_2	(+) c610. Changes in inventories of merchandise (-) c6931. Impairment losses on merchandise (+) c7931. Reversal of impairment of merchandise	C31_1 - C31_2= c610- c6931+c7931
2. Raw materials	C32_1	C32_2	(+) c611. Changes in inventories of raw materials (-) c6932. Impairment losses on raw materials (+) c7932. Reversal of impairment of raw materials	C32_1 - C32_2= c611- c6932+c7932
3. Other supplies	C33_1	C33_2	(+) c612. Changes in inventories of other supplies (-) c6933. Impairment losses on other supplies (+) c7933. Reversal of impairment of other supplies	C33_1 - C33_2= c612- c6933+c7933

4. Finished and work-in-progress goods	C34_1	C34_2	(+) c710. Changes in inventories of work in progress (+) c711. Changes in inventories of semi-finished goods (+) c712. Changes in inventories of finished goods (+) c713. Changes in inventories of by-products, waste and recovered materials (-) c6930. Impairment losses on finished goods and work in progress (+) c7930. Reversal of impairment of finished goods and work in progress	C34_1 - C34_2= c710 +c711+c712 + c713 - c6930+c7930

The main source of information in order to estimate the agricultural industry is the "Economic Accounts of Agriculture (CEA)" by the Ministry of Agriculture, Fisheries and Food (MAPA). This source comply with the Regulation (EC) No 138/2004 of the European Parliament and of the Council of 5 December 2003 on the economic accounts for agriculture in the Community. Therefore, the concepts, definitions and estimations are established according to this regulation, and among them those related to inventories. In the publication of this data, information is shown as a total, therefore, no detailed information for different types of inventories.

In this data, estimations for finished goods together with work-in-progress goods, are included, mainly wine and livestock, in this last category, it is not taken into account livestock considered as GFCF. The change of inventories is being calculated using the difference between stocks at the beginning and at the end of the season. In order to estimate the changes in inventories of natural growth of animal and vegetable products, we also use the accounts compiled by the Ministry of Agriculture, Fisheries and Food.

The main source of information for forestry products, are the Economic Accounts for Forestry, also in line with the European Regulation concerning Economic Accounts for Agriculture.

It's included in the P.1 estimates all examples of the different forms work-in-progress according to ESA 2010 para 3.148(b), although some amounts like the growth of standing timber are negligible.

Change in inventories is made by industry, with the exception of the crude oil product, which is calculated independently.

The main source of information are the Structural Business Survey for manufacturing, trade and services sectors from INE, the Construction Industry Structure Survey, from the Ministry of Transport and Sustainable Mobility, statistics from the Ministry of Agriculture, Fisheries and Food, statistics of the Corporation tax and the Personal income from the Spanish Tax Agency, data from Bank of Spain and data from the General Comptroller of the State Administration.

This base information is referred to the variable changes in inventories divided into three categories: finished and work-in-progress goods, goods for resale and materials and other supplies. It is available at 4 digits-level NACE Rev.2 but not by any product classification.

According to the General Accounting Plan, work-in-progress are set out in group 3 "INVENTORIES" that includes the following items:

30. Goods for resale

31. Raw materials

32. Other supplies

33. Work in progress

34. Semi-finished goods

35. Finished goods

36. By-products, waste and recovered materials

39. Impairment of inventories

Inventories are valued at cost of acquisition or cost of production: goods for resale, raw materials or other supplies must be valued at the purchase price and work in progress, semi-finished goods or finished goods, will be valued at the cost of production.

The cost of production shall be determined by adding to the purchase price of raw materials and other consumable materials the costs directly attributable to the product. The reasonably proportionate share of costs indirectly attributable to the products concerned must also be added, to the extent that those costs correspond to the period of manufacture.

Livestock is valued at cost of production price of each category, which is obtained from the market price in the wholesalers market being reduced applying to that price a coefficient to discount the profit of the farmer.

The estimate only includes the stocks which are owned by Spanish residents, regardless of whether they are held abroad or not; and it does not include stocks owned by foreign residents.

In order to transform the valuation of the inventories of the company accounting surveys into national accounting principles, two factors that correct these valuation problems have been calculated.

5.12.1 CORRECTION FACTOR

This factor aims to correct the value of the inventories that are valued in business accounting as a sum of production costs, adding a margin for the net operating surplus. In this way, inventories become valued at basic prices, as it is indicated in the ESA 2010.

To calculate this factor by industry, $b_{e,i,t}$, the assumption that in each industry the percentage of net operating surplus (NOS) is the same regardless of the products to which the inventories refer has been made, since data on this magnitude are only available per industry. From this, the factor has been estimated as one plus the proportion that NOS supposes with respect to the value of the output without NOS. Or, in a simpler way, the factor is the ratio between output (how inventories in national accounting should be valued) and the difference between output minus net operating surplus (as they are really valued in structural business surveys). Mathematically it is:

$$b_{e,i,t} = 1 + \frac{NOS_{i,t}}{OUTPUT_{i,t} - NOS_{i,t}} = \frac{OUTPUT_{i,t}}{OUTPUT_{i,t} - NOS_{i,t}}$$

where
- $e \rightarrow$ categories
- $i \rightarrow$ industry
- $t \rightarrow$ year

Although it has been generalized for all categories, in practice it only applies to inventories of finished and work-in-progress products, since they are valued at production cost, that is, as sum of costs. The other categories do not need this adjustment since they are already valued at acquisition prices by the companies themselves.

$$Inventories_{e,i,t}^{basic\ prices} = Inventories_{e,i,t}^{sum\ of\ costs} \text{ x } b_{e,i,t}$$

where
- $e \rightarrow$ inventories of finished and work-in-progress goods
- $i \rightarrow$ industry
- $t \rightarrow$ year

5.12.2 UPDATE FACTOR:

This second factor tries to update the valuation of the inventories, since if the inventories are kept for several periods in the warehouse, their value is outdated and according to the criteria of the ESA 2010 it is required to keep the prices updated.

To estimate the age of the inventories, a study of the average period of stay of the inventories in the warehouse by type of existence and industry has been carried out. This recommendation consists on calculating the ratio between the value of inventories and sales for each type of inventory and industry. As data sources, the variables of initial inventories, turnover, provision of services, merchandise sales and consumption of raw materials and other supplies have been used, calculated according to the intermediary system described in chapter 3 (Transition from private accounting and administrative concepts to ESA2010 national accounting concepts) of the GNI Inventory Guide, using data from the Structural Business Statistics by industry.

$$\text{Period of stay in the warehouse} \quad \rightarrow \quad k_{e,i,t} = \frac{Inventories_{e,i,t}}{Sales_{e,i,t}}$$

where
- $e \rightarrow$ categories
- $i \rightarrow$ industry
- $t \rightarrow$ year

This update factor, $a_{e,i,t}$, is calculated as a weighted average of the price index (PI) between the years in which the inventories that are still in the warehouse were purchased and the current year. That means that by multiplying the value of the inventories by this factor the valuation obtained corresponds to current year prices, regardless of when they entered the warehouse. To find the weights, it is assumed that companies use the FIFO method of accounting.

$$\text{Inventories value update factor} \quad \rightarrow \quad a_{e,i,t} = \sum_{n=0}^{k_e} W_{e,i,n} \cdot \frac{PI_{e,i,t-\frac{1}{2}-n}^{t-\frac{1}{2}}}{100}$$

where

- $PI^{t-\frac{1}{2}}_{e,i,t-\frac{1}{2}-n}$ → Price index between the price in the middle of the year t -n and in the middle of the year t, for the industry i and the category *e*
- $W_{e,i,t} = \begin{cases} \frac{1}{k_{e,i,t}} & \text{if } n = 1,2,\dots,\lfloor k_{e,i,t} \rfloor - 1 \\ \frac{k_{e,i,t} - \lfloor k_{e,i,t} \rfloor}{k_{e,i,t}} & \text{if } n = \lfloor k_{e,i,t} \rfloor \end{cases}$ where $\lfloor k_{e,i,t} \rfloor$ → integer part function of $k_{e,i,t}$

The use of prices referred to the middle of the years is due to two assumptions:

a) both acquisitions and inventories transfers are made uniformly throughout the period

b) price change uniformly throughout the period

In this way it can be assumed that all changes in inventories are made mid-term at the current price at that moment: $P_{e,i,t-\frac{1}{2}} = \frac{P_{e,i,t} - P_{e,i,t-1}}{2}$. And therefore this is the price at which the changes in inventories is valued.

After that, the adjustment due to valuables is made in the changes in inventories of goods for resale for industries G46 and G47, which are the ones in which it is estimated that this type of goods is included.

Then changes in inventories for all categories and industries become properly valued and updated and those estimates are used for obtaining balances and holding gains and losses.

Finally, different distribution matrices are used, one for each type of inventory, to distribute the variation in inventories of each industry by products.

The CPA considered as inventories are those which contain goods. Within the products that are services, the only ones considered are CPA 58 (Publishing services), 59 (Motion picture, video and television programme production services, sound recording and music publishing), 62 (Computer programming, consultancy and related services) and 71 (Architectural and engineering services; technical testing and analysis services).

Changes in inventories for crude oil is calculated based on the CORES Annual Statistics Report. It includes the change for raw materials reserves, which we assume is mostly crude oil. As the datum is expressed in thousands of tons, it is converted into value by means of a series of operations:

– first the conversion into Brent barrels multiplying by 1000000/135 (number of Brent barrels there are in a thousand tons),

– second, this is multiplied by the average price of the Brent barrel in the corresponding year,

– and finally, this value is converted into Euro, as the barrel price is in dollars, multiplying by the year's average exchange rate.

The price per barrel and the @/$ exchange rate are also available in the CORES Annual Statistics Report.

In S.12, only changes in inventories are recorded in subsectors S.125 and S.127. The source of information which is used in both cases is the Central Balance Sheet Office of the Bank of Spain. The changes in inventories in these subsectors are insignificant and no information is available on the products that compose it.

Available sources for changes in inventories in the case of General Government are mainly referred to: (1) strategic reserves of gas and oil and (2) supplies and other materials in certain public enterprises included in sector S. 13. In these cases, the information source are the annual accounts of these units, elaborated in compliance with the accounting regulations that are applicable. In sector S.14, the estimate of the changes in inventories is obtained on a residual basis, once the total economy and the resident sectors are estimated.

The General Accounting Plan sets how to value stocks and corrections of value that can occur throughout the financial year, whether reversible or irreversible. It is supposed that in good accounting practice, the companies will provide the corresponding provisions if the depreciation is reversible and at a loss if it is irreversible.

The General Accounting Plan establishes that inventories are valued at cost of acquisition or cost of production: goods for resale, raw materials or other supplies must be valued at the purchase price and work in progress, semi-finished goods or finished goods, will be valued at the cost of production. Besides the General Accounting Plan establishes that in the case of assigning value to specific goods that are part of an inventory of goods interchangeable with each other, the average price or weighted average cost methods shall be generally adopted. The FIFO method is acceptable and can be adopted if the company considers it more convenient for its management. A single method of value allocation shall be used for all inventories of a similar nature and use.

Regarding to public accounting, the current accounting regulations allow the following valuation methods:

1) in general, the weighted average cost or the average price method.

2) the FIFO method is acceptable and can be adopted if the company considers it more convenient for its management.

In particular, stocks of strategic oil and gas reserves are valued at the weighted average cost of acquisition.

Allocation by products for inventory categories is as follows:

– Finished goods and work-in-progress: change in inventories is assigned to the main product of the industry if this one can be considered as an inventory, i.e., those that contain goods. Otherwise, it is assigned to another secondary product that meets that condition and it is produced by the industry.

– Goods for resale: for manufacturing industries the same assumption as finished and work-in-progress products is used. For services, trade and construction specific products were chosen based on analysis.

– Materials and supplies: it is used the structure on intermediate consumptions for the industries where the products are inventories.

Therefore, the distribution by products of the changes in inventories for finished goods and work-in-progress, and for materials and supplies is relatively aligned with aggregates of output and intermediate consumption. Therefore, the aforementioned indices are used to deflate them.

5.13 Acquisitions less disposals of valuables

The work on the Acquisitions less disposals of valuables (ALDOV) estimate has required a detailed revision of the products that can be considered as valuables according to their CPAs and NACEs activities, in accordance with the ESA 2010 definition. A comprehensive review of sources covering both statistical sources and market studies has been done: Industrial Products Survey and Structural Business Statistics, compiled by INE; Extra-EU trade statistics and with other EU States, produced by the Audit Office; Market study by the Art and Patronage Foundation that promotes Caixabank; Registers of the National Currency and Stamp Institution and of the Bank of Spain, etc.

As far as the estimation method is concerned, the commodity flows method has been used, as it is the most comprehensive and appropriate given the sources of information available.

According to ESA 2010, valuables are non-financial goods that are not used primarily for production or consumption, do not deteriorate (physically) over time under normal conditions and are acquired and held primarily as stores of value.

Valuables include the following types of goods:

a) Precious stones and metals, such as diamonds, non-monetary gold, platinum, silver, etc. (AN.131)

b) Antiques and other art objects, such as paintings, sculptures, etc. (AN.132)

c) Other valuables, such as jewellery fashioned out of precious stones and metals and collectors' items. (AN.133)

The acquisition or disposal of such goods by households should not be included in final consumption expenditure. Besides, by convention, in order to avoid frequent reclassification between the three main types of capital formation, i.e. between acquisition less disposal of valuables, fixed capital formation and changes in inventories, (despite the ESA general criteria), the acquisition or disposal of these goods by jewelers, art dealers and museums should also be recorded as acquisition or disposal of valuables.

According to this definition, a comprehensive review has been made of all products that can be considered to be valuable objects according to their CPAs and NACEs activities, including the establishment of the next matching between products and assets.

Valuables		
Assets	**Products**	**CPA**
AN.131 Precious metals and stones	24 Basic metals	24.41.10 Silver, unwrought or in semi-manufactured forms, or in powder form
		24.41.20 Gold, unwrought or in semi-manufactured forms, or in powder form
		24.41.30 Platinum, unwrought or in semi-manufactured forms, or in powder form
AN.132 Antiques and other art objects	90 Creative, arts and entertainment services	90.03.13 Original works of painters, graphical artists and sculptors
AN.133 Other valuables	26.3 a 26.8 Other electronic and optical products	26.52.11 Wrist-watches, pocket-watches, with case of precious metal or of metal clad with precious metal
	32 Other manufactured goods n.e.c.	32.11.10 Coins (made of precious metal, not legal tender)
		32.12.11 Cultured pearls, precious or semi-precious stones, including synthetic or reconstructed, worked but not set
		32.12.13 Articles of jewellery and parts thereof; articles of goldsmiths' or silversmiths' wares and parts thereof
		32.12.14 Other articles of precious metal; articles of natural or cultured pearls, precious or semi precious stones

Acquisitions less disposals of valuables have been estimated using the following sources of information:

– Industrial Products Survey: For the purposes of the ALDOV estimation, it is used in the estimation of output of products 24, 26.3 to 26.8 and 32.

– Structural Business Statistics. It estimates the intermediate consumption of product 24 and the trade margins of products 26.3 to 26.8 and 32.

– Market Study by the Art and patronage Foundation: The information presented in this report on the Spanish art market originates from primary and secondary sources. Arts Economics directly collects and analyses all the data obtained through galleries, auction houses, art collectors and antiques, databases of prices for art parts, economic and financial databases, experts from the industry and other actors involved in the art trade and its ancillary services.

– Based on this report, the production and product margins of product CPA 90 have been estimated.

– Extra-EU trade statistics and other EU countries: On the basis of this information, the import and export headings of all products considered as valuable items are estimated.

– Registers of the National Currency and Stamp Institution and of the Bank of Spain: It provides information on the production of collector coins processed with precious metals by the National Currency and Stamp Institution. The Bank of Spain on its website constantly keeps this information on collector coins that are considered valuable items. This source of information is used to estimate a part of the output of product 32.

The ALDOV estimation method is based mainly on supply estimates due to a lack of information from the demand side.

5.14 Exports of goods

Exports of goods take place when economic ownership of goods changes from residents to non-residents. It applies irrespective of corresponding physical movements of goods across frontiers.

The main source for the valuation of exports of goods is the *International Merchandise Trade Statistics*[36] (IMTS), prepared by the Customs and Excise Department of the Spanish Tax Agency. IMTS provide information on the total euro value of shipments (intra-EU) and exports (with third-party countries) of goods based on different variables. They are elaborated by means of the INTRASTAT declarations[37] and single administrative documents (DUA from their Spanish initials)[38] submitted under statistical obligations to this Department.

In the IMTS, the shipments and exports of goods are measured "*free on board*" (FOB). FOB valuation includes: the value of goods at basic prices; the cost of transport and insurance services to the exporter´s border.

It is also necessary to point out that IMTS cover the following cases of exports of goods that take place without the goods crossing the country's frontier:

– Goods produced by resident units operating in international waters which are sold directly abroad to non-resident units. Examples of these include oil, natural gas, fishery products or maritime rescue. INTRASTAT declarations and DUA consider specifically this case.

– Transportation equipment and other mobile equipment not tied to a fixed location.

– Goods which have been lost or destroyed after changing ownership but before crossing the frontier of the exporting country in the case where the good is replaced (the export of the good will end up being recorded).

In addition, it is necessary to take into account that IMTS exclude goods that do not cross the border:

– Goods in transit in Spain.

– Goods sent to or from embassies, military bases or other enclaves of Spain or another country, located within the national borders of a country other than the first.

– Transportation equipment and other types of mobile equipment which leave a country temporarily, without any change of ownership, for example, installation or construction equipment used abroad.

– Goods leaving Spain temporarily and returning there within a year, in their original state and without a change of ownership.

[36] https://sede.agenciatributaria.gob.es/Sede/estadisticas/estadisticas-comercio-exterior.html
[37] Chapter 10 "Main data sources used", INTRASTAT.
[38] Chapter 10 "Main data sources used", EXTRASTAT.

– On consignment, goods which get lost or destroyed after crossing a frontier but before change of ownership occurs, are only implicitly excluded from the statistics, only in case that the goods are replaced.

Main considerations:

1) Those operators **whose annual statistical value of exports and imports** does not exceed the threshold issue of assimilation are not required to submit the INTRASTAT declaration. The Statistics on the Exchange of Goods between EU states includes an estimate of the value of shipments not covered by INTRASTAT. This estimate is elaborated by identifying those operators whose annual turnover does not exceed the threshold issue of assimilation on the Value Added Tax (VAT) documents (model 349). The aforementioned tax document disclose whether the dispatch / introduction has been of goods, services or triangular trade. It also records directly the monetary value of the dispatch / introduction, making possible the estimation of merchandise trade under the established threshold.

2) In addition, IMTS also add an estimate of the value of shipments which have been made by operators who have not filled the INTRASTAT declaration even when they are obliged to. The mentioned estimate is accomplished by using the information on VAT returns.

3) IMTS include the value of goods leaving national borders to be processed or repaired without a change of ownership; they are identified by the nature of the transaction recorded in the INTRASTAT or DUA declarations. The value of such goods is deducted from total exports, since they are not exports in terms of National Accounts and the Balance of Payments.

4) The purchase of a good by a resident from a non-resident and the subsequent resale of the good to another non-resident, without the good entering the borders of the operator ("merchanting"), should be recorded as a net export of goods. Since this sale is not recorded in IMTS, it is necessary to add to the total exports, the estimate of the before mentioned merchanting. It is obtained via the information provided in this regard by the International Trade in Services Survey (elaborated by INE).

Goods performed illegally or undeclared for the purposes of import duty and VAT, corresponding entirely to drug smuggling resulting in the re-export of drugs. Besides, it is important to take into account that:

a) With regard to supplies between affiliated companies, in the case that the establishment receiving the goods assumes responsibility for decisions on levels of supply and prices at which their production is marketed, a change of economic ownership is imputed into IMTS.

On the other hand, it is necessary to indicate that in foreign trade statistics, there is no clear way to identify the operations that take place between subsidiaries and the relationships that exist between them.

In case of cross-border movements between members of the enterprise group, it is considered that it affects the ownership, because the parent company and the affiliated company (or two affiliates of the same group) are considered as separate legal entities being resident in the country where they are established.

b) With regard to the transactions referred to in paragraph 3.165 of the ESA 2010, these transactions are included in the data of IMTS, except those relating to smuggled goods

or products not declared for purposes of import duties and VAT, whose estimate is made as illegal activities.

c) A continuous monitoring of asymmetries with other countries in trade of goods data, is regularly carried out in the Balance of Payment framework.

d) Exports of goods data are confronted with domestic output, imports data, as well as with domestic use data, in the supply and use Tables framework.

5.15 Exports of services

Exports of services consist of all services rendered by residents to non-residents. In the compilation of exports of services, Spanish National Accounts integrates the results on services and travel credits of the Balance of Payments.

The main source of information of exports of services (excluding final consumption expenditure of non-resident households) is the *International Trade in Services Survey* (ITSS), elaborated by the National Statistical Office (INE). ITSS includes information on the value of imports and exports of non-tourist services, net exports of goods under merchanting, as well as various transfers (current and capital) and acquisitions or disposals of non-produced non-financial assets.

ITSS is a quarterly sample survey on resident units in the national economy carrying out international transactions[39].The INE's survey on international trade in services and other international transactions uses as its main framework the 349 VAT Model. In addition, a specific sub-population for firms engaging in transactions relating to the processing and repair of goods is also included in the framework. The latter unit group is obtained from information provided by the tax authorities.

The framework has been stratified based on the propensity to engage in the transactions under review, taking into account: a) available historical information, and b) economic activity (Spanish National Classification of Economic Activities, CNAE) and size (number of employees) of the firms[40].

[39] According to the methodology (proyecto_ReformaEncuestaComercioInternacional.pdf (ine.es) of the International Trade in Services Survey (ITSS), all those statistical units resident in Spain (companies and other entities) that are found within the population scope constitute the research target. In particular, the ITSS methodology details that since the purpose of the survey is to study the phenomenon of the international trade in services, or "merchanting of services with non-residents," as well as to research the other international operations included in the questionnaire, the population universe will refer to the set of entities (companies or other institutions) that are resident in Spain, including the embassies and consulates of Spain in the rest of the world. With regard to the population exclusions, this excludes all those units that are not resident from the statistical perspective (their economic interest center is outside of Spain), regardless of whether or not they are resident from a taxpayer perspective. In turn, there are units, with a tax identity number, of non-residents from a taxpayer perspective, but which have a permanent establishment in Spain, and which, for statistical purposes, are residents, and therefore, are surveyable. Individuals, even if they reside in Spain, are excluded from the survey scope, due to their scant influence on the international trade in services. Lastly, excluded from the population scope are embassies, consulates, military bases and other foreign governmental bodies, as well as international bodies located in Spain, as they are considered to be non-resident.

[40] For further information see the ITSS Methodology, section 4.3, "Population scope and sample design".
The survey uses stratified random sampling, with equal probabilities of selection within each stratum. The population framework has been stratified according to three variables, which are the branch of activity, the size of the company and the fact of carrying out exports or imports of services continuously or sporadically, in accordance with the historical information from the Banco de España. This way, there are strata that are researched comprehensively, due to comprising companies that, in recent years, have regularly carried out international services operations, according to the Cash Register (see answer to question Q.5.63), or companies that carry out a specific service (for example, transformation and repair services or payment provider services).
The economic activity of the company, according to CNAE-2009 division, is grouped into eight strata, and the size of the company, measured by the number of wage earners (employees), is grouped into five brackets. The sample allocation is based on the distribution of the exports and imports of services.

Taking into account the source used, we should remark that construction services carried out abroad for a period of less than a year remain part of the activities of the producer institutional unit. In other words, turnover of construction activities obtained abroad by domestic staff for a period < 1 year is considered part of domestic output and these services are also within the scope of coverage of ITSS[41].

In addition, regarding exports of software related goods and services, in International Trade in Goods Statistics (ITGS) the Combined Nomenclature distinguishes between storage mediums with standardized software (license to use) and the ones which are empty. The exports of software goods are valued at full value instead of at the value of the carrier. In case that the storage medium contains standardized software, it is valued at full value; if not, at the value of the carrier (only the value of the storage medium). On the other hand, ITSS covers the standardized software which has to be downloaded from internet, the periodic renewal of standardized software, any custom-developed software and royalties of software and therefore license to reproduce.

Related to the application of the economic ownership principle for the underlying intellectual property assets, the main data source used for compilation of services and other international transactions related to IPPs assets in BoP is the INE's International trade in services survey (ITSS / ECIS). Transactions between resident and non-resident units are registered in the survey when the IPP service is provided or when the legal property of the asset is transferred. For the time being, no evidence is available on the possible relevance of cases where economic ownership may differ from legal ownership.

In addition, additional sources are used for some particular type of services:

5.15.1 PROCESSING AND REPAIR SERVICES

These include the transformation, assembly, packaging, etc. of goods, and maintenance and repair work performed by companies that are not the owners of such goods. The value recorded for maintenance and repairs is the value of the service provided by whoever transforms or repairs the goods, not the gross value of the goods before and after the repairs.

The value of goods leaving/entering national borders to be processed or repaired without a change of ownership are excluded from exports/imports of goods. The adjustments to be made to ITGS are estimated to be consistent with estimated exports and imports of processing and repair services, as it is detailed below:

In flows of processing and repair services with the rest of the world, the following six components are required (three relating to the case where resident units send goods abroad for processing or repair without change of ownership and other three relating to

Each year, as is possible, a rotation is performed in the sample strata, in order to avoid the respondent units making tired, and to enable the entry of new companies, so as to represent the updated framework better.
Worth noting is that, in accordance with the legal establishment of a reporting threshold of exemption for the Register of Entities Reporting Payments and Collections Abroad of the Bank of Spain (or Cash Register), which entered into force in 2008, this has not included those reporting entities whose debits or credits with non-residents during the reference year are all less than or equal to 50,000 euros. Therefore, the survey framework has this minimum level. Nonetheless, the estimates carried out by the Bank of Spain over the value of the operations carried out by the reporting entities below the threshold barely reach 3% of the total.
The size of the sample for the ITSS reaches some 7,300 units, which are researched quarterly. This is a smaller sample than the previous sample, which reached more than 10,000 units (though, as has been indicated, in many cases, the surveyed companies systematically stated that they did not carry out these operations).

[41] http://www.ine.es/en/metodologia/t37/t373019801_en.pdf

the case in which resident units process or repair goods from another country, also without change of ownership):

Resident unit sending goods abroad for processing or repair:

(A) Imports of processing / repair services.

(B) Value of goods leaving Spain to be processed / repaired in another country.

(C) Value of goods returned to Spain after having been processed / repaired in another country.

Resident unit processes or repairs goods for another country:

(A) Export of processing / repair services.

(B) Value of goods owned by a nonresident unit leaving Spain after being processed / repaired.

(C) Value of goods owned by a non-resident unit entering Spain to be processed / repaired by the resident unit.

Processing and repair services are obtained from ECIS.

Then, each of the 6 items mentioned are estimated for each quarter Q taking into account a time lag of 1 quarter between the shipment of goods to be processed / repaired and their reception once processed / repaired.

5.15.2 FREIGHT

Imports / payments of goods in the accounts of the rest of the world of National Accounts / Balance of Payments must be valued free on board (FOB), at the border of the exporting country. However, in ITGS imports of goods are valued at the border of the importing country (CIF). This value, therefore, adds to the FOB value of such flows, the value of transport services (freight) and the premiums paid for the transport insurance of real estate between the borders of the exporting and importing country. [42]

The transport service performed on the goods can be of different types: air, sea, road or rail. In addition, transport services and transport insurance may have been provided by resident units in the national economy or by non-resident units.

On the other hand, in the input-output framework of the National Accounts, imports of goods are recorded and valued CIF, at the border of the country imports.

In this way:

1. If the transport service and transport insurance between borders in the import of a good has been carried out by a resident unit:

   – The value of the transport service and the insurance premium paid for transport between borders is not accounted in the value of the import of the good (FOB) in the account system.

   – The value of the transport service and the insurance premium paid for transport between borders is accounted in the value of the import of the good (CIF) in the

[42] This amount is called CIF-FOB adjustment in the compilation of the goods (payments) of the Balance of Payments.

input-output framework. In addition, the value of the transport service and the transport insurance service between borders is recorded as an export of services.

2. If the transport and cross-border insurance service in the importation of a good has been carried out by a non-resident unit:

   – The value of the transport service and the insurance premium paid for transport between borders is not accounted in the value of the import of the good (FOB) in the account system. However, the value of the transport service and the transport insurance service between borders is recorded as an import of services in the account system, and the value of the net premium as an import / payment of income.

   – The value of the transport service and the insurance premium paid for transport between borders are accounted in the value of the import of the good (CIF) in the input-output framework.

The change in the CIF value of imports of goods in the input-output framework to the value of such imports in the system of accounts (FOB) and the flows of imports and exports of services and associated rents aforementioned is called the **CIF-FOB adjustment**.

In addition, in general, any freight and insurance services provided by residents to non-residents (by non-residents to residents) is registered as exports / revenues (imports / payments) of services in the National Accounts. Most of these flows are linked to imports of goods and, a good part of these (transport between borders), are part of the CIF-FOB adjustment described.

The value of such transport services and the premiums or transport insurance services linked to imports of goods and, in general, the value of transport services (freight) linked to the transport of goods are estimated, for the year t-3, t-2 and t-1, where t is the year of estimation, as a product of a unit price per ton transported and kilometer, by the number of tons transported and by the distance traveled.

ITGS provides the quantity of imported tons for good consideration and mode of border transport (in the case of flows related to the CIF-FOB adjustment, the imported or exported tons to be processed or repaired are not taken into account in the estimate change of ownership).

The estimation of the unit price of the transport service and premium and transport insurance service are made according to the specificities of each type of transport used.

In addition, a correction factor resulting from the ratio between the statistical value of the flow of introductions / imports of goods in ITGS is applied to the results obtained, once corrected with estimates of trade under threshold and non-response, and the total value statistic of introductions / imports (exports / expeditions) of goods in ITGS without correcting.

5.15.3 INSURANCE AND PENSION SERVICES

Resident insurance companies may offer insurance and reinsurance coverage to non-resident units.

In the case of non-life insurance:

If a non-resident unit has contracted non-life insurance with a resident insurance company, an export is registered for the value of the insurance service produced. The value of the

service is quantified as the premiums attributable to the year plus the complementary premiums minus the adjusted claims.

Premiums attributable to non-life insurance (excluding freight insurance) contracted by non-resident units with resident insurance companies are calculated as the product of premiums received by companies resident according to the results of the ITSS, multiplied by the ratio between attributable premiums and subscribed premiums of non-life insurance received by the entire Insurance Companies subsector (S.128) of the national economy.

Complementary premiums are recorded as resources of the rest of the world in investment income attributable to policyholders (D.441).

Complementary premiums related to non-life insurance (excluding freight insurance) contracted by non-resident units with resident insurance companies are estimated as the product of the premiums received by companies resident according to the results of the ITSS multiplied by the ratio between complementary premiums and subscribed premiums of non-life non-transport insurance received by the entire subsector S.128 resident.

The adjusted claims related to non-life insurance (excluding freight insurance) contracted by non-resident units with resident insurance companies is estimated from the claims paid by companies resident according to the results of the ITSS, as the product of the claims by the ratio between adjusted claims and claims of non-life non-transport insurance to be paid for the entire resident subsector S.128.

In the case of life insurance:

If a non-resident unit has contracted life insurance with a resident insurance company, an export is registered for the value of the insurance service produced. The value of the service is quantified as the premiums attributable to the fiscal year plus the complementary premiums less the benefits attributable to the financial year less increases (more decreases) in the technical reserves.

Premiums attributable to life insurance contracted by non-resident units with resident insurance companies are estimated as the product of premiums received by companies resident based on ITSS results multiplied by the ratio between attributable premiums and premiums subscribed of life insurance, received by the entire subsector S.128 resident.

The investment income that comes from the investment of technical life insurance reserves is attributed to the policyholders (complementary premiums), measured in proportion to the technical reserves that correspond to the contracted service, and are recorded as resources of the rest of the world in investment income attributable to policyholders (D.441).

Complementary life insurance premiums contracted by non-resident units with resident insurance companies are estimated as the product of life insurance premiums received by resident companies, according to ITSS results, multiplied by the ratio between complementary premiums and subscribed premiums for life insurance received by the entire subsector S.128 resident.

The aggregate of benefits attributable to the year is estimated less increases (more decreases) in technical reserves and insurance with participation in life insurance benefits contracted by non-resident units with insurance companies resident, as the product of the premiums of life insurance received by companies resident according to the results of ITSS multiplied by the ratio between the aggregate of benefits attributable to the year less increases (more

decreases) in technical reserves and insurance with participation in benefits, and subscribed insurance premiums of life in the quarter received by the entire subsector S.128 resident.

In the case of pension services:

If a non-resident employer has a resident pension system for its employees (excluding social security systems), an export must be registered for the value of the pension service produced.

Income from the investment payable / receivable for rights to social security pension benefits are attributed to the beneficiaries of the plans (supplementary contribution paid by households) are recorded as resources of the rest of the world in Investment income attributable to the beneficiaries of pension plans (D.442).

The value of the exported pension service is estimated as the product of the ratio of the production of resident social insurance pension funds (excluding social security systems) over the social contributions paid by the employer in the national economy according to the Table of Pensions and contributions to social insurance pension systems (excluding social security systems) made by the rest of the world according to the ITSS survey (elevated by the estimation of operations of units not included in the framework).

In the case of reinsurances:

If a non-resident insurer has contracted a reinsurance with a resident company, an export is registered for the value of the reinsurance service produced. The value of the service is quantified as the premiums attributable to the year less the commissions payable, plus the complementary premiums minus the adjusted claims.

In this way, the value of reinsurance exports (accepted reinsurance from the rest of the world) is equal to:

(+) Subscribed premiums

(+) Variation of provisions for premiums not consumed

(+) Complementary premiums

(-) Compensation

(-) Variation of provisions for compensation

(-) Commissions

(-) Stabilization reserve variation

The complementary premiums that would be derived from said contract are recorded as resources of the rest of the world in investment income attributable to policy holders (D.441).

On the other hand, in the system of national accounts, the total resources of a given product in the national economy must be equal to the total uses to which it is destined.

In the case of reinsurance services, the aforementioned equality is specified in:

Total Resources = production (reinsurance accepted) + reinsurance imports = Total uses = intermediate consumption (ceded reinsurance) + reinsurance exports

In terms of the method for estimating the reinsurance, it is indicated here below:

The accounting information of insurance companies (corporations, mutual societies or social security mutual societies) and reinsurance companies (dedicated exclusively to the

provision of reinsurance services), provided by the General Directorate of Insurance and Pension Funds (DGSFP) of the Ministry of Economy, Trade and Business, as well as of the Insurance Compensation Consortium, provided by said entity, relative to its reinsurance activity, allows to determine the value of the non-financial operations that, in terms of national accounting, are derived from said reinsurer activity.

In addition, the subscribed premiums and claims accrued by such entities regarding reinsurance contracts accepted with non-resident units are available. The estimation of the rest of the accounting components that allow the estimation of the value of the accepted reinsurance production that is destined for export or to intermediate consumption, by applying their ratio to the total premiums subscribed or claims accrued for all the accepted reinsurance services of the group of entities considered.

For ceded reinsurance, it is proceeded on the same way.

The possible resulting imbalance between the production and internal consumption of reinsurance services and the flows of reinsurance services with the rest of the world, is transferred to the adjusted claims of reinsurance accepted and assigned with the rest of the world in proportion to the premiums subscribed in such reinsurance, guaranteeing compliance with the accounting identity explained above.

5.15.4 FINANCIAL INTERMEDIATION SERVICES INDIRECTLY MEASURED (FISIM)

A general description of FISIM and the sources and method used in estimates on FISIM in BoP and NA are included in chapter 3.

5.15.5 PERSONAL, CULTURAL AND RECREATIONAL SERVICES

The ECIS data are supplemented by estimates of exports of prostitution services.

5.15.6 GOVERNMENT GOODS AND SERVICES (NOT INCLUDED ELSEWHERE)

Included here are the expenses of foreign embassies, consulates, military units, etc., in the national economy, excluding personal expenses of diplomatic, consular and military staff[43] (from ITSS).

Additionally, it includes some expenses relating to the provision by the Spanish Government of mainly services associated with health, education, administrative costs, tourism offices and educational institutions, etc. (from ITSS).

This item also includes some payments to the EU for “traditional own resources” that are received by the General Government from EU institutions on account of services rendered for the collection of these funds, which are disseminated by the Spanish Treasury.

[43] Estimate of the amount of personal expenses of diplomatic, consular and military staff is based on the weight represented by the personal expenditure of diplomatic, consular and military staff of Spanish embassies, consulates and military bases abroad on their total expenditure.

5.15.7 FINAL CONSUMPTION EXPENDITURE BY NON-RESIDENT HOUSEHOLDS IN THE NATIONAL ECONOMY

Estimates of final consumption expenditure by non-resident households in the national economy come from the *Tourism Expenditure Survey* (EGATUR), carried out by the INE, with the following deductions (1), 2), 3 and 4)) and additions (5), 6) and 7)):

1. Expenditure related to the international transports costs of non-resident households travelling to Spain. This information is provided directly by EGATUR so that it is deducted.

2. The part of the visitors' expenses relating to the margins and fees paid to non-resident travel agencies and tour operators. It is estimated with data from the Statistics on Products in the Services Sector; specifically, it is calculated the percentage of commissions over tour packages price, and it is applied on the expenditure in tourism package (data from EGATUR).

3. The value of the services of tour packages hired abroad: This amount is estimated through the percentage of the expenditure of non-resident tourists related to the value of services included in tourism packages hired to non-resident tour operators according to EGATUR.

~~4.~~ Expenditure related to business travelers, in accommodation, transport and food services, which has been paid by the company, which are estimated through the weight of the expenditure paid by the company over the total tourist expenditure according to EGATUR.

5. The personal expenditure incurred by diplomatic, consular and military personnel in Spain (and their dependents), estimated through the mirror expenditure of Spanish diplomatic, consular and military personnel abroad.

6. Exports of rental services of owner occupied dwellings. A description of the sources and methods used in estimates on rental services are included in chapter 3.

7. Estimates relating to illegal activities.

5.15.8 TRAVEL

The INE’s tourist expenditure survey (EGATUR) is the basic information source for the estimation of travel credits. The estimates for debits are based essentially on the information available through the BE's payment systems, regarding external transactions settled with bank cards issued against accounts in Spain. In addition, in accordance with international methodological guidelines, estimated rental expenses imputed to the owners of real estate located in a country other than their country of residence are recorded both as travel receipts and payments when they are on temporary stays there.

5.16 Imports of goods

Imports of goods occur when economic ownership of goods changes from non-residents to residents. This applies irrespective of corresponding physical movements of goods across frontiers.

The main sources for the valuation of goods imports are the *International Merchandise Trade Statistics* (IMTS), which are formed by *Non-EU Merchandise Statistics* and *EU Members Merchandise Statistics*, prepared by the Customs and Excise Department of the Spanish Tax Agency. IMTS and *Non-EU Merchandise Statistics* and *EU Members Merchandise Statistics* provide information on the total euro value of shipments (intra-EU) and imports (with third-party countries) of goods based on different variables. They are prepared from the use of the INTRASTAT declarations and single administrative documents (DUA from their Spanish initials) submitted under statistical obligations to the mentioned Department.

In the IMTS and *Non-EU Merchandise Statistics* and *EU Members Merchandise Statistics*, the imports of goods are valued at the *cost-insurance-freight* (CIF) price at the border of the importing country. The CIF price is the price of a good delivered at the frontier of the importing country, or the price of a service delivered to a resident, before the payment of any import duties or other taxes on imports, or trade and transport margins within the country.

It is also necessary to point out that IMTS cover the following cases of imports of goods that occur without the goods crossing the country's frontier:

– Goods produced by non-resident units operating in international waters which are sold directly abroad to resident units. Examples of these include oil, natural gas, fishery products or maritime rescue.

– Transportation equipment and other mobile equipment not tied to a fixed location.

– Goods lost or destroyed after changing ownership before crossing the frontier of the exporting country. In general it can be said that IMTS includes this category, although it depends on the delivery terms and whether these goods are replaced or not.

In addition, it is necessary to take into account that IMTS exclude:

– Goods in transit in Spain (except for some cases which are currently quantified by the Customs and Excise Department of the Spanish Tax Agency).

– Goods sent to or from embassies, military bases or other enclaves of Spain or another country located within the national borders of a country other than the first.

– Transportation equipment and other types of mobile equipment which leave a country temporarily, without any change of ownership, for example, installation or construction equipment used abroad.

– Goods leaving Spain temporarily and usually return there within a year, in their original state and without a change of ownership.

– On consignment, goods which get lost or destroyed after crossing a frontier, but before change of ownership occurs, are only implicitly excluded from the statistics in the event of a replacement of the goods.

Therefore, imports of goods in terms of National Accounts and Balance of Payments have been obtained by making certain adjustments to the sources used:

1. Those operators whose annual statistical value of exports and imports does not exceed the threshold issue of assimilation are not required to submit the INTRASTAT declaration. The *Statistics on the Exchange of Goods between EU states* include an estimate of the value of shipments not covered by INTRASTAT. This estimate is elaborated by identifying those operators whose annual turnover does not exceed the

threshold issue of assimilation on the Value Added Tax (VAT) documents (model 349). The aforementioned tax document reveals whether the dispatch / introduction has been of goods, services or triangular trade. It also records directly the monetary value of the dispatch / introduction, making possible the estimation of merchandise trade under the established threshold.

2. In addition, IMTS also add an estimate of the value of shipments made by operators who have not filed the INTRASTAT declaration even when it is mandatory; it is also prepared using the information on VAT returns.

3. IMTS includes the value of goods entering national borders to be processed or repaired without a change of ownership; they are identified by the nature of the transaction recorded in the INTRASTAT or DUA declarations. The value of such goods is deducted from total imports, since they are not imports in terms of National Accounts and the Balance of Payments.

4. Imports of goods are to be valued free on board at the border of the exporting country. IMTS records imports of goods according to the term of delivery CIF, being necessary to carry out the corresponding CIF/FOB adjustment. The CIF/FOB adjustment is made up of two elements that are estimated separately in the Spanish National Accounts:

– On the one hand, the CIF/FOB adjustment related to freight services;

– On the other hand, the insurance linked to the CIF/FOB adjustment, whose calculation is carried out jointly with the estimation of the imports and exports of insurance services. In general terms, the estimation method combines information on tons of merchandise and distance transported (from IMTS), freight prices and insurance cost.

5. Goods in transit included in IMTS are excluded from imports of goods in National Accounts/Balance of Payments.

6. Other imports of goods not crossing the country's frontier not included in IMTS: this adjustment is mainly based on evolution of total figures of imports and historical information.[i]

Imports of goods performed illegally or undeclared for the purposes of import duty and VAT are added, corresponding entirely to drug and tobacco. Besides, it is important to take into account that:

a) With regard to supplies between affiliated companies when the establishment receiving the goods assumes responsibility for decisions on levels of supply and prices at which their production is marketed, a change of economic ownership is imputed in IMTS.

b) With regard to the transactions referred to in paragraph 3.165 of the ESA 2010, these transactions are included in the data of IMTS, except those relating to smuggled goods or products not declared for purposes of import duties and VAT, whose estimate is made as illegal activities.

A continuous monitoring of asymmetries in trade of goods in BoP data with other countries is regularly carried out in the Balance of Payment framework.

Imports of goods and output data are confronted with domestic demand, exports data, as well as in the supply and use Tables framework.

5.17 Imports of services

Imports of services consist of all services rendered by non-residents to residents. Spanish National Accounts integrates most of the results on non-tourism[44] and tourist services in the Balance of Payments, compiled by the Central Bank.

5.17.1 NON-TOURISM SERVICES

This section explains the information sources and calculation procedures, used for the imports of non-tourism services estimates of Balance of Payments and National Accounts (Balance of Payments results are mostly integrated in National Accounts).

The main source of information is the *International Trade in Services Survey* (ITSS), elaborated by the National Statistical Office (INE). ITSS includes information on the value of imports and exports of non-tourism services, net exports of goods under merchanting, as well as various transfers (current and capital) and acquisitions or disposals of non-produced non-financial assets. It is a quarterly sample survey targeted at firms and other resident units in Spain.

The INE's survey on international trade in services and other international transactions uses as its main framework the 349 model. PSP data do not include the transactions on own account, so the information is completed using the full reporting population of PSPs. In addition, a specific sub-population for firms engaging in transactions relating to the processing and repair of goods is also included in the framework. The latter unit group is obtained from information provided by the tax authorities[45].

The results of the ITSS survey are adjusted to include an estimate for any transactions relating to units operating exclusively below the @50,000 threshold. This estimate is elaborated by identifying those operators whose annual turnover does not exceed the threshold issue of assimilation on the Value Added Tax (VAT) documents (model 349). The previous tax document mentioned reveals whether the dispatch / introduction has been of goods, services or triangular trade. It also records directly the monetary value of the dispatch / introduction, making possible the estimation of transactions under the established threshold.

Taking into account the source used, we should remark that construction services carried out by a non-resident, within the national economic territory, for a period of less than a year, are recorded as imports of services, since these services are also within the scope of coverage of ITSS.

In addition, regarding imports of software related goods and services, in the ITGS, it is distinguished in the Combined Nomenclature, between storage mediums with standardized software (license to use) and the ones which are empty.

The imports of software goods are valued at full value instead of at the value of the carrier. In case that the storage medium contains standardized software, it is valued at full value; if not, at the value of the carrier (only the value of the storage medium).

[44] Imports of services, excluding final consumption expenditure flows of residents in the rest of the world (which would be imports of tourism services).

[45] According to the Methodology of ITSS, the main framework for the survey is completed with the population of INTRASTAT/EXTRASTAT reporting units which carry out the issue and introduction of merchandise to be transformed and repaired, as potential reporting units of those services that were not duly represented in the main framework.

On the other hand, ITSS covers the standardized software which has to be downloaded from internet, the periodic renewal of standardized software, any custom-developed software and royalties of software and therefore license to reproduce.

Related to the application of the economic ownership principle for the underlying intellectual property assets, imports of services are mainly estimated from ITSS data and the ITSS questionnaire is particularly careful as IPPs can present significant difficulties for their classification in the correct EBOPS heading.

In addition, ITSS is supplemented for some types of services with additional sources which are specified below, where appropriate:

5.17.1.1 Processing and repair services

These include the transformation, assembly, packaging, etc. of goods, and maintenance and repair work performed by companies that are not the owners of such goods. The value recorded for maintenance and repairs is the value of the service provided by whoever transforms or repairs the goods, not the gross value of the goods before and after the repairs.

The adjustments to be made to foreign trade statistics of goods in relation to goods crossing the border to be processed and repaired without change of ownership, are estimated to be consistent with estimated exports and imports of processing and repair services, as it is detailed in chapter 5.15.

5.17.1.2 Freight

Freight services are estimated according to the CIF / FOB adjustment mentioned in 5.16 and according to the methods and sources as described in section 5.15.

5.17.1.3 Insurance and pension services

Non-resident insurance companies may offer insurance and reinsurance coverage to resident units.

In the case of non-life insurance:

If a resident unit has contracted non-life insurance with a non-resident insurance company, an import is registered for the value of the insurance service produced. The value of the service is quantified as the premiums attributable to the year plus the complementary premiums minus the adjusted claims.

Premiums attributable to non-life insurance (excluding freight insurance) contracted by resident units with non-resident insurance companies are calculated as the product of premiums received by companies resident according to the results of the ITSS, with the corresponding elevation by uncovered units, multiplied by the ratio between attributable premiums and subscribed premiums of non-life insurance received by the entire *Insurance Companies* subsector (S.128) of the national economy.

Complementary premiums are recorded as resources of the national economy in *investment income attributable to policyholders* (D.441).

Complementary premiums related to non-life insurance (excluding freight insurance) contracted by resident units with non-resident insurance companies are estimated as the product of the premiums received by companies non-resident according to the results of the ITSS multiplied by the ratio between complementary premiums and subscribed premiums of non-life non-transport insurance received by the S.128 resident subsector.

The adjusted claims related to non-life insurance (excluding freight insurance) contracted by resident units with non-resident insurance companies is estimated from the claims paid by companies non-resident according to the results of the ITSS, as the product of the claims by the ratio between adjusted claims and claims of non-life non-transport insurance to be paid for the entire S.128 resident subsector.

In the case of life insurance:

If a resident unit has contracted life insurance with a non-resident insurance company, an import is registered for the value of the insurance service produced. The value of the service is quantified as the premiums attributable to the fiscal year plus the complementary premiums less the benefits attributable to the financial year less increases (more decreases) in the technical reserves.

Premiums attributable to life insurance contracted by resident units with non-resident insurance companies are estimated as the product of premiums received by companies non-resident based on ITSS results multiplied by the ratio between attributable premiums and premiums subscribed of life insurance, received by the S.128 resident subsector.

The investment income that comes from the investment of technical life insurance reserves is attributed to the policyholders (complementary premiums), measured in proportion to the technical reserves that correspond to the contracted service, and are recorded as resources of the national economy in *investment income attributable to policyholders* (D.441).

Complementary life insurance premiums contracted by resident units with non-resident insurance companies are estimated as the product of life insurance premiums received by non-resident companies, according to ITSS results, multiplied by the ratio between complementary premiums and subscribed premiums for life insurance received by the S.128 resident subsector.

The aggregate of benefits attributable to the year is estimated less increases (more decreases) in technical reserves and insurance with participation in life insurance benefits contracted by resident units with insurance companies non-resident, as the product of the premiums of life insurance received by companies non-resident according to the results of ITSS multiplied by the ratio between the aggregate of benefits attributable to the year less increases (more decreases) in technical reserves and insurance with participation in benefits, and subscribed insurance premiums of life in the quarter received by the S.128 resident subsector.

In the case of pension services:

If a resident employer has a non-resident pension system for its employees (excluding social security systems), an import must be registered for the value of the pension service produced.

Income from the investment payable / receivable for rights to social security pension benefits are attributed to the beneficiaries of the plans (supplementary contribution paid by households) are recorded as resources of the national economy in *investment income attributable to the beneficiaries of pension plans* (D.442).

The value of the exported pension service is estimated as the product of the ratio of the production of resident social insurance pension funds (excluding social security systems) over the social contributions paid by the employer in the national economy according to the *Table of Pensions* and contributions to social insurance pension systems (excluding social security systems) made to the rest of the world according to the ITSS survey (elevated by the estimation of operations of units not included in the framework).

In the case of reinsurances:

If a resident insurer has contracted a reinsurance with a non-resident company, an import is registered for the value of the reinsurance service produced. The value of the service is quantified as the premiums attributable to the year less the commissions payable, plus the complementary premiums minus the adjusted claims.

In this way, the value of reinsurance imports (reinsurance ceded to the rest of the world) is equal to:

(+) Subscribed premiums

(+) Variation of provisions for premiums not consumed

(+) Complementary premiums

(-) Claims

(-) Variation of provisions for compensation

(-) Commissions

(-) Stabilization reserve variation

The complementary premiums that would be derived from said contract are recorded as resources of the national economy in investment income attributable to policy holders (D.441).

On the other hand, in the system of national accounts, the total resources of a given product in the national economy must be equal to the total uses to which it is destined.

In the case of reinsurance services, the aforementioned equality is specified in:

Total Resources = production (reinsurance accepted) + reinsurance imports = Total uses = intermediate consumption (ceded reinsurance) + reinsurance exports

In terms of the method for estimating the reinsurance, it is indicated here below:

The accounting information of insurance companies (corporations, mutual societies or social security mutual societies) and reinsurance companies (dedicated exclusively to the provision of reinsurance services), provided by the insurance supervisor, as well as of the Insurance Compensation Consortium, provided by said entity, relative to its reinsurance activity, allows to determine the value of the non-financial operations that, in terms of national accounting, are derived from said reinsurer activity.

In addition, the subscribed premiums and claims accrued by such entities regarding reinsurance contracts accepted with non-resident units are available. The estimation of the rest of the accounting components that allow the estimation of the value of the accepted reinsurance production that is destined for export or to intermediate consumption, by applying their ratio to the total premiums subscribed or claims accrued for all the accepted reinsurance services of the group of entities considered.

For ceded reinsurance, it is proceeded on the same way.

The possible resulting imbalance between the production and internal consumption of reinsurance services and the flows of reinsurance services with the rest of the world, is transferred to the adjusted claims of reinsurance accepted and assigned with the rest of the world in proportion to the premiums subscribed in such reinsurance, guaranteeing compliance with the accounting identity explained above.

5.17.1.4 Financial intermediation services indirectly measured (FISIM)

A general description of FISIM and the sources and method used in estimates on FISIM in BoP and NA are included in chapter 3.

5.17.1.5 Personal, cultural and recreational services

This heading includes prostitution services also.

5.17.1.6 Government goods and services (not included elsewhere)

Included here are the receipts and payments linked to the expenses of embassies, consulates, military units, etc. and some expenses relating to the provision by the Spanish Government of services associated with health, education, administrative costs, tourism offices, educational institutions, etc.

5.17.2 FINAL CONSUMPTION EXPENDITURE BY RESIDENT HOUSEHOLDS IN THE REST OF THE WORLD

Estimates of final consumption expenditure by resident households in the rest of the world are based on the information available through the Central Bank's payment systems regarding external transactions settled with bank cards issued against accounts in Spain. This information, which is broken down by type of transaction (via ATMs, point of sale terminals or e-commerce), is complemented with data published by the Telecommunications Market Commission on the breakdown of e-commerce by activity sector, in order to isolate the part relating to tourism.

In addition, the following deductions (1), (2), (3) and (4) and additions (5) and (6) are taken into account:

1. The part of the visitors' expenses relating to the margins and fees paid to non-resident travel agencies and tour operators. It is estimated with data from the *Statistics on Products in the Services Sector*; specifically, it is calculated the percentage of commissions over tour packages price, and it is applied on the expenditure in tourism package (data from ETR).

2. The value of the services of tour packages hired abroad: this amount is estimated through the percentage of the expenditure of resident tourists related to the value of services included in tourism packages hired to resident tour operators[46] according to ETR.

~~3.~~ Expenditure related to business travelers, in accommodation, transport and food services, which has been paid by the company, which are estimated through the weight

of the expenditure paid by the company over the total tourist expenditure according to ETR.

4. The personal expenditure incurred by the Spanish diplomatic, consular and military personnel abroad.

5. Exports of rental services of owner occupied dwellings. A description of the sources and methods used in estimates on rental services are included in chapter 3.

6. Estimates relating to illegal activities.

Chapter 6

The balancing or integration procedure and validating the estimates

6 The balancing or integration procedure and validating the estimates

6.1 GDP balancing procedure

6.1.1 INTRODUCTION

The basic features of the process followed in balancing GDP are as follows:

f) Simultaneous balancing of supply/demand/income. All the estimates of GDP for different reference years include the estimation of this aggregate from those three approaches, although the production and expenditure approach are predominant. Also, with breakdowns which may vary depending on the character of the reference year considered (definitive, provisional or advance), overall GDP measurement always implies a balancing process by product and by industry.

g) This balancing process, in the final estimates of the National Accounts of Spain, relies on the input/output system, comprising a supply table and a use table. In the provisional and advance estimates, balancing systems are used under the same philosophy of achieving one single GDP measured from all three different approaches but at a less detailed level of disaggregation.

h) In general terms, there are no restrictions on revising earlier accounting estimates. However, there are controls that allow the revisions to be quantified at the most detailed level and then to ensure that they are not caused by an error of measurement in the current process or a methodological change in the basic data source. Once a significant revision of an aggregate takes place, then it is communicated to users via press releases or explanatory notes in the corresponding part of the web page.

i) The SUT are being currently compiled at current prices and at previous years' prices.

j) A high degree of disaggregation was chosen for the work (see Chapter 6: 102 NACE breakdown for market industries ,distinguishing between S.11 and S.14, ten different NACEs for S.13 and four industries for S.15 and 140 products in all aggregates except for non-market industries, with 119 products. The published estimates comprise 110 products and 81 industries, a level that is adequately backed up by the statistics available.

So, Supply and Use balancing is applied for reaching a single estimate of GDP.

6.1.2 ROLE OF THE INPUT/OUTPUT SYSTEM IN THE NATIONAL ACCOUNTS OF SPAIN

The fundamental element in the process of balancing the estimates of the National Accounts, is an Input-Output system[47] guaranteeing simultaneous and standardised estimates of GDP and its components from all three accounting approaches: production, expenditure and income.

[47] Starting with the estimates corresponding to the year 1985, the INE has drawn up Input-Output tables almost every year.

The system attempts to follow the recommendations of ESA2010 as closely as possible by including:

– A supply table, with the output and import matrices at basic prices plus the required adjustment columns to obtain the valuation at purchasers' prices.

– A use table at purchasers' prices, which contains the three basic matrices (intermediate consumption, final demand, primary inputs) and provides the balances by product and as a result the value added by industry. The cells of the intermediate and final demand matrices are valued at purchasers' prices.

– A use table valued at basic prices (in the cells of the intermediate and final demand matrices).

– An input-output table (product by product type).

– The creation of such a detailed system requires the availability of statistical information. This entails conducting specific studies to overcome certain shortcomings in the statistical sources (for example regarding the compilation of the NPISH sector accounts and the estimation of its output by industry and product) and also the creation of working groups with other public institutions involved in the production of statistical data when needed.

– The creation of working groups with the Bank of Spain and with the Audit Office (Ministry of Finance) is worth mentioning at this point. In the first case, the working group has achieved a complete integration of the rest of the world accounts and the Balance of Payments.

– Furthermore, in order to study the Public Sector and its associated transactions in greater depth, experts from INE, the Audit Office and the Bank of Spain formed another working group. This co-operation not only facilitates a more accurate assignment of the units by sector, but also brought in elements which improve the quality and reliability of the estimates, by means of cross-checking the results obtained from various, although obviously complementary, approaches and sets of basic information.

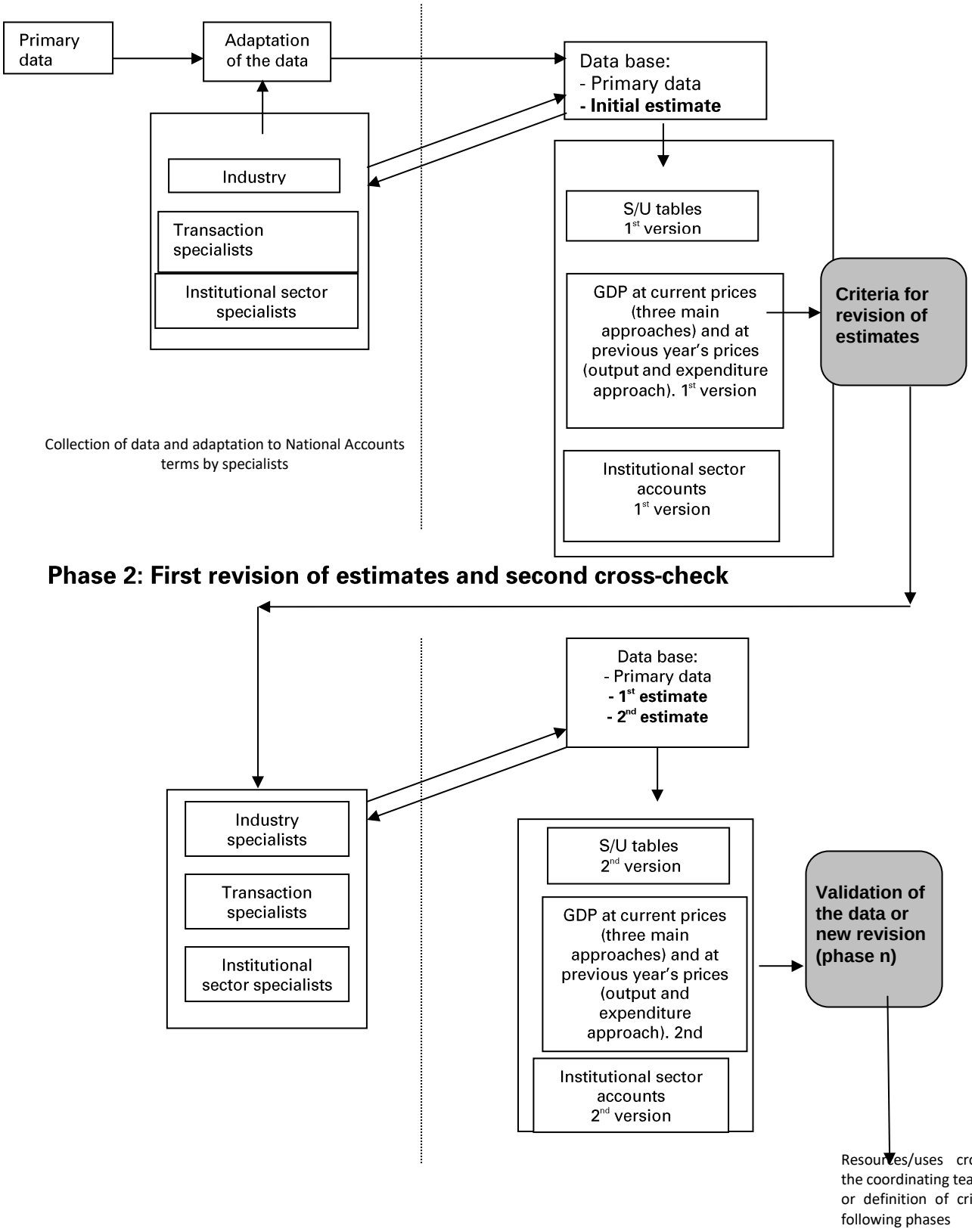
On the other hand, the recommendations made by the GNI Committee on the measurement of GNI and its components are taken into account.

6.1.3 DESCRIPTION OF THE BALANCING PROCESS

6.1.3.1 Description of the SNA estimation process

The following figure 1 shows the working scheme used for the SUTs:

Figure 1. Working scheme.



- The first step in this estimation process is to collect the relevant data from the various sources (surveys, registers, etc.), which have to be adapted to the national accounts

criteria. This adaptation is necessary because normally the data do not exactly meet the national accounts criteria: valuation, classification, time reference, etc.

- In a subsequent phase, all the independent estimates are inserted into overall integration systems, interrelated by automatic procedures of error cross-checking and common general rules, which facilitate the transfers of data from each of them to the co-ordinator of the balancing processes: SUT tables; sector accounts, total economy and rest of the world accounts; estimates in current prices of GDP and its components from the production, expenditure, and income approaches and estimates in previous year's prices of GDP and its components from the two first mentioned approaches..

  – In a third step, the analysis of the data is carried out by a supervisory team, which examines the imbalances and/or inconsistencies that may rise in the SUTs, balances items of the institutional sectors. When required, the atypical values or most relevant imbalances are analysed with the staff involved, with the aim of eliminating any mistake that may happen in the estimating processes or identify non-routine revisions in the basic sources.

  – Two possible outcomes may follow the end of phase 1: if the figures do not balance or there is some result that seems inconsistent with the others[48] the estimates are revised once again, on the basis of lines established by the supervisory team; if the results are considered valid, they are entered into the database of final estimates. Once this process has been completed, this will give a structured and balanced database. The procedure of balancing and revising is supported by a set of computing tools, especially by a number of elements for verification and cross-checking of the results.

In reference to the description above, it is important to stress that for all the years of the time-series of the National Accounts of Spain, balancing the GDP and its components is undertaken from the three approaches: production, expenditure and income. In this third case, it should be pointed out that rather than a balance, it would be more proper to speak of a cross-check, given that in market activities, the gross operating surplus or the mixed income are by definition balancing items. In non-market activities, the balance is also guaranteed, by definition, since total output is obtained by totalling up the costs: intermediate consumption, compensation of employees, other taxes (net of subsidies) on production and consumption of fixed capital.

One issue that should be raised is that both approaches, supply and use and institutional analysis are integrated.

In that sense, the "exogenous" estimates for the complete set of accounts of some institutional sectors provided by other statistical producers (Audit Office and Bank of Spain): financial institutions, public administrations, and, of course, although with its own unique characteristics, the rest of the world sector, are incorporated to both approaches. The transactions of the production and generation of income accounts of these sectors are considered to be exogenous variables, which cannot be modified in the process of balancing GDP.

Even in other sectors, part of the value of their transactions is closely linked with the process of the overall estimate of GDP. As examples, we give the attributed rent services of owner occupied dwellings, which by definition constitute part of the output of the household sector, and other transactions related to those services being contained in the

[48] The analysis of accounts of goods and services by products and the institutional sector accounts make possible to verify the balances of the variables and to consult a series of ratios which relate certain variables with others and that attempt to create a minimum set of quality-control checks of the estimates. Besides, an analysis of the accounts by industry is undertaken by checking and analyzing a set of ratios by industry.

accounts of the sector (the balance of the income generation account of those services is the only GOS of the households) and the domestic services provided by remunerated staff in households.

6.1.3.2 Balancing

General Diagram

The I/O system was established on the basis of the general criteria referred to above. The balancing process aims to guarantee that the supply/use system is balanced both at purchasers' prices and at basic prices and also procedures are set up to link together the Input-Output system and the accounts of the institutional sectors.

The balancing process takes into account the differences in valuation at purchasers' prices and at basic prices, bringing together the two types of valuation when constructing the Supply and Use tables. This approach is shown in diagram 2:

g) The diagram is asymmetric with regard to the valuations used in the initial phases of the two tables; in the case of the supply table the work is based on an initial version at basic prices; in the case of the use table, it is based on an initial version at purchasers' prices.

h) In the supply table work starts by the transcription of the data on output by industry at basic prices into an initial version of the production matrix *products x industries*. Adding imports at CIF valuation to output would provide an initial estimate of the supply table at basic prices.

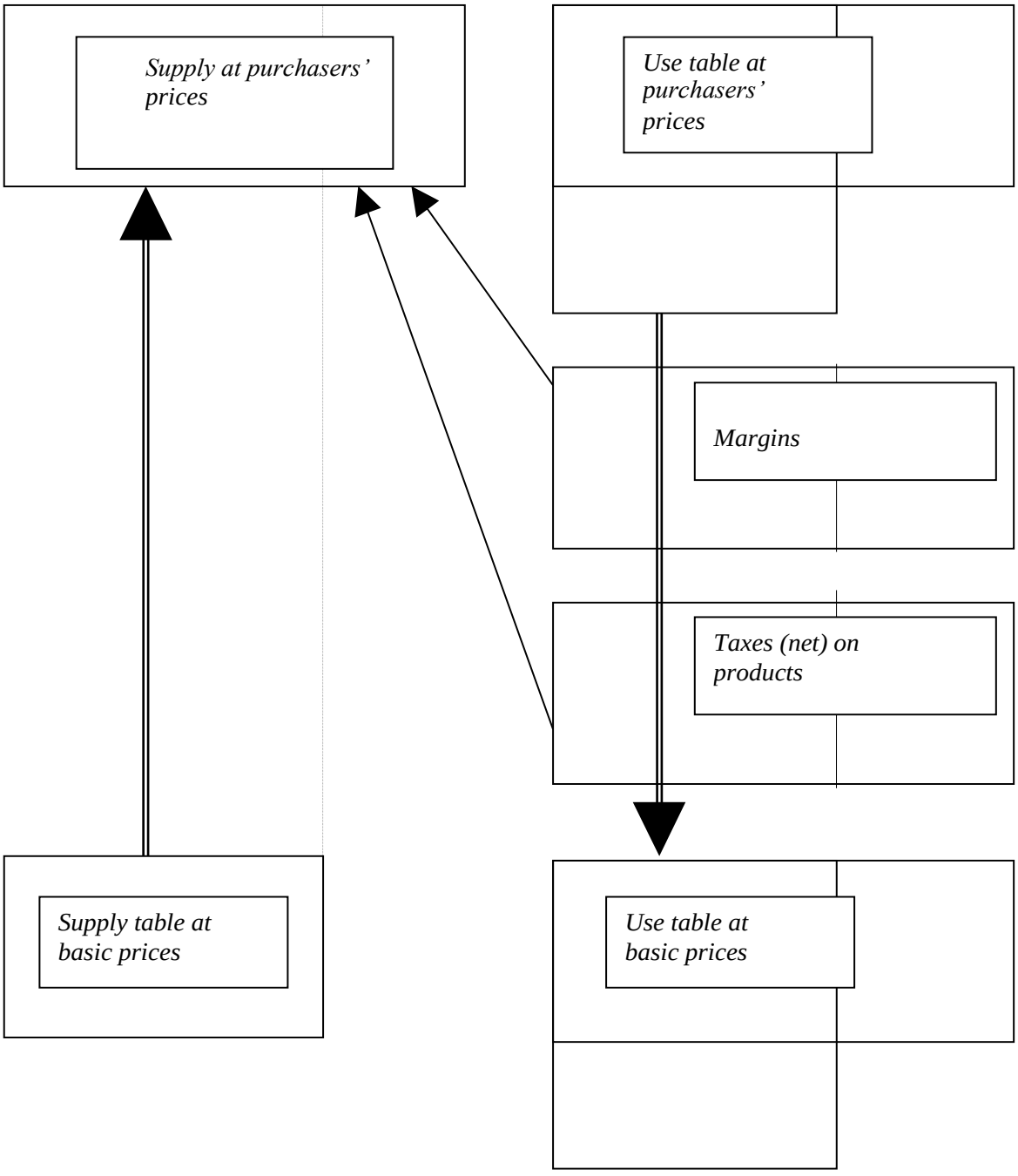
i) In the case of the use table the initial approach involves transcribing the data of the production and generation of income accounts by industries; the completion of an initial intermediate consumption matrix on the basis of the existing statistics and final demand at purchasers' prices, (exports at FOB valuation).

j) That approach is also related to the usual characteristics of the sources of information: under normal circumstances, data on output by products supplied by the producer units, on the basis of their accounting documents, will be valued at basic prices while imports by products from the statistics on external trade will be valued at CIF; however, the starting data for the use table, (current expenditures of the producer units covered in the business surveys, expenditure on final consumption of households, etc.) will be valued at purchasers' prices -in other words, the distribution margins and taxes on products are included.

k) For some subsets of industries/products the output estimate (and therefore of the data in the supply table) is subsidiary and/or complementary to the estimate of the costs (use table data): this applies for example in the case of o*ther non-market output* related to the non-market units. Here, it is necessary to estimate the costs structure in advance and, subsequently, to identify market output and the output for own final use. Similarly, the output estimate for own final use, both from the supply and demand perspective, implies the automatic balancing of this transaction.

l) The process is finalised by estimating the tax matrices (net of subsidies) on products and the distribution margins, which allow the transition between use at purchasers' prices and use at basic prices.

Figure 2: Process of estimating the supply/use system in SNA-2010



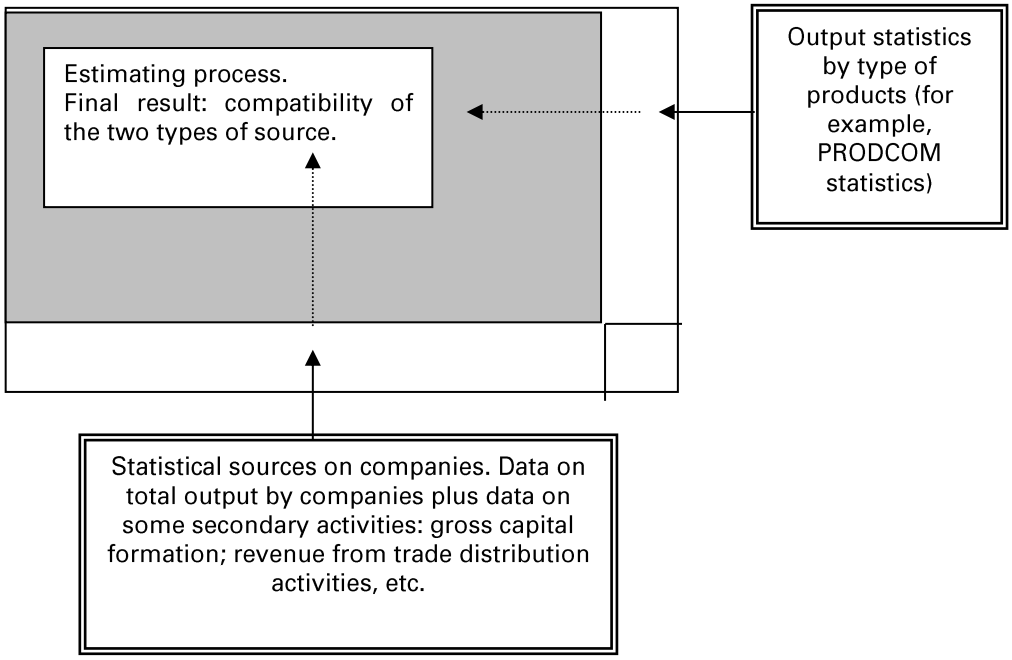
Estimation of the initial version of the supply table

In order to build an initial version of the supply table at basic prices, the following processes are performed:

i) Initial version of the output matrix by industry and product.

The experts that compile the estimates for the different industries transcribe the initial data of the total output for each industry, broken down into primary output and all the secondary outputs that it is initially possible to identify in the sources. The process of estimating the output by industries is described in detail and for each category of activities in Chapter 3. However, it appears useful to describe in detail here a particular part of the estimating process, namely the portion relating to detecting and estimating secondary outputs.

Figure 3: Diagram of the process of drawing up the matrix of production in the Supply table.



In the first place, attention should be drawn to the treatment in the supply table of the products from the PRODCOM list.

This methodology is based on the Annual Structural Business Surveys (manufacturing and services sectors) and both the Annual Surveys on Products in the Industry (EIP) and in the Services Sector (EPSS). The fact that the economic surveys use a questionnaire adapted to the structure of private accounting makes their use easier in conjunction with the other additional sources: taxation statistics, annual reports of companies and business associations and the Central Balance Sheet data from the Bank of Spain.

ii) Initial version of the imports vector.

Along with the estimate of the production matrix it is also necessary to make an estimate of the initial vector of the imports matrix, for which the following procedures are carried out:

– Imports of goods (CIF) come from the *International Merchandise Trade Statistics* (IMTS), prepared by the Customs and Excise Department of the Spanish Tax Agency. These statistics provide information on the total euro value of shipments (intra-EU) and exports (with third-party countries) of goods based on different variables. They are elaborated by means of the INTRASTAT declarations and single administrative documents (DUA from their Spanish initials) submitted under statistical obligations to this Department. IMTS results by Combined Nomenclature codes are allocated to CPA products. In addition, as explained in Chapter 5., several adjustments are made to IMTS data in each product.

– Imports of services. As explained in Chapter 5., the main source of information is the *International Trade in Services Survey* (ITSS), elaborated by INE. ITSS includes information on the value of imports and exports of non-tourism services, net exports of goods under merchanting, as well as various transfers (current and capital) and acquisitions or disposals of non-produced non-financial assets. ITSS survey supplies information on imports of services following the EBOP classification to BoP and INE. An allocation to CPA products is then made. In addition, ITSS is supplemented for some types of services with additional sources, as specified in chapter 5.

Estimate of the initial version of the use table

The main processes performed in drawing up the first version of the use table are:

i) Transcription of the data of the production and generation of income accounts.

On the basis of the sources and methods described in Chapter 3 of this manual, the data of the production and generation of income accounts, by industries, are transcribed into the use table.

ii) Transcription of the data on intermediate consumption.

Here four types of sources are involved: the Survey of Consumption and Investment the information contained in the various sets of structural statistics of the INE and in other sources (company reports) which are described in Chapter 3; a specific exercise to obtain data on structures of intermediate consumption carried out by those drawing up the table, by the different industries and a *supply route* estimate (commodity flows) in those inputs in which a fundamental or exclusive use can be identified.

The *Survey of Intermediate Consumption and Investment* (ECII) is performed to supplement the information provided by the Industrial Business Survey, given that the latter collects the information by means of questionnaires which are very largely matched to the General Chart of Accounts, and therefore are very highly disaggregated. The ECII provides information expressed in value, with a high degree of breakdown, for the following sections of the EIE:

– Consumption of raw materials

– Consumption of other supplies

– Outside services

– Investments

iii) Transcription of the data on final demand.

Various transactions undergo a customised process (for details about these variables, see Chapter 5):

– An estimate of household consumption spending in Spanish economic territory, double broken down by consumption purpose using the classes of the COICOP (Classification of Individual Consumption by Purpose) and by product using the CPA (Classification of Products by Activities) is made, as described in chapter 5.

– Gross fixed capital formation by assets is estimated on the basis of a product vector, which gives the initial version of this variable by products at purchasers' prices.

– A bridge-matrix is used to build assets from the estimates made by product. In some cases, such as housing, where there are many sources of information at asset level, the opposite process is used as a contrast: products are estimated from a step array that disaggregates the asset into products.

– The data for changes in inventories undergo specific adjustments before being entered in the initial version of the tables (adjustment for holding gains/losses, see end of Chapter 5. Moreover, the change of inventories of crude oil is calculated from the Annual Statistical Report of CORES using the variation of raw material reserves, which was supposed to be mostly raw oil. As the data is expressed in thousands of tons, it had to be converted into value through the next calculations:

- data is converted into Brent barrels unit multiplying by 1000000/135 (number of Brent barrels in thousand tons),
- at the second place, this data are multiplied by the average Brent barrel price during the corresponding year,
- finally, this value is converted to euros, since the price of the barrel is in dollars, multiplying by the average exchange rate of the year.

The price per barrel and the @ / $ exchange rate are also available in the CORES Annual Statistical Report.

– Exports of goods come from the *International Merchandise Trade Statistics*[49] (IMTS), prepared by the Customs and Excise Department of the Spanish Tax Agency. These statistics provide information on the total euro value of shipments (intra-EU) and exports (with third-party countries) of goods based on different variables. They are elaborated by means of the INTRASTAT declarations[50] and single administrative documents (DUA from their Spanish initials)[51] submitted under statistical obligations to this Department. In such statistics, the shipments and exports of goods are measured "*free on board*" (FOB). FOB valuation includes: the value of goods at basic prices; the cost of transport and insurance services to the exporter´s border. IMTS results by Combined Nomenclature codes are allocated to CPA products. In addition, as explained in Chapter 5., several adjustments are made to IMTS data in each product.

On the other hand, exports of services come mainly from the *International Trade in Services Survey* (ITSS), elaborated by INE, which supplies information on exports of services following the EBOP classification to BoP and INE. An allocation to CPA products is then made. In addition, ITSS is supplemented for some types of services with additional sources, as specified in chapter 5.

Estimate of the initial version of the auxiliary tables by differences in valuation

[49] https://sede.agenciatributaria.gob.es/Sede/estadisticas/estadisticas-comercio-exterior.html
[50] Chapter 10 "Main data sources used", INTRASTAT.
[51] Chapter 10 "Main data sources used", EXTRASTAT.

The auxiliary tables refer to two types of component: matrices of taxes (and subsidies) on products and matrices of distribution margins relating to goods.

A. Distribution margins relating to goods.

With regard to the distribution margin matrices, the methodology entails three basic processes: estimation of the distribution channels by products and types of use (intermediate or final); assignment of margin rates by types of products and channels; cross-checking of results with alternative estimates of supply (both statistical and taxation sources).

To carry out the optimum procedure to draw up a complete margin matrix two types of estimates are required:

– On the one hand, it is necessary to determine the various distribution channels for each group of products.

– On the other hand, the margin rates applied in each marketing phase.

An approximation for practical purposes can be obtained by estimating the margins (and also the taxes on products) directly in the supply table, using average ratios by type of product. This is considered a second best solution, less methodologically consistent, but, on the other hand, it may be more strongly supported by statistics which are simpler to use. In the case of the second best approach, in order to estimate overall margins by products, it would be necessary to work on the basis of taxation data or surveys of trade that would allow a suitable estimate to be made.

In order to make an estimate of the total for transport margins by product, it will be necessary to draw up transport margin matrices, taking into account the various types of transport (road, air, rail or water).

Drawing up the transport margins starts from the breakdown of the freight transport services by type of product from the freight transport surveys by type of freight. This breakdown will be compared with the expenditures on transport declared by the various industries in the economic statistics.

Starting from this initial estimate of the overall transport margins by type of product, the transport margin matrices are drawn up, taking into account the distribution by uses of each product from the table relating to Use at purchasers' prices.

In order to reconcile the two tables, it will be essential to convert the supply table at basic prices to the supply table at purchasers' prices and the use table at purchasers' prices to the use table at basic prices, since the conversion of the first requires the conversion of the second, as will be explained later. An additional problem arises when these matrices or vectors of margins are to be added to the resources at basic prices, as double counting may occur, specifically of the output of the distribution intermediaries, as they appear valued in the corresponding row/columns of the output matrix. In order to avoid this, the actual matrices or vectors of distribution include in the row corresponding to the distribution margins and the values of those margins are preceded by a minus sign.

In this way, the total for resources given in the "Total" column at the right of the table provides the data by products at purchasers' prices. So, the value of the margins is finally reassigned to that of the goods distributed, with the result that the rows that contain the margins show a zero value for the total at purchasers' prices.

A similar treatment is applied both to the trade margins and to the transport margins. The representation in the supply table will comprise one or more adjustment columns (if there

is breakdown by types of trade/transport). However, a clarification must be made in the case of transport: in fact, the total supply of transport services at purchasers' prices will not show a zero value as the diagram indicates, but in fact that part of transport services which has as its use the intermediate consumption of industries or the household final consumption expenditure will always be shown.

B. Taxes net of subsidies on products

A similar procedure is used for the case of the taxes net of subsidies on products. In principle and in an optimum diagram, the data on the taxes and subsidies should be structured in matrix form, in other words, broken down both by the type of product and by use (intermediate or final) of the products. As explained in section 3. of this manual, in this case the information offered in the tax classifications is very useful as, in some cases, it makes it possible to identify types of uses on which taxes will fall.

Yet, as Figure 4 shows, the particular feature to be noted here is that the taxes (net) also fall on the distribution margins. This is an aspect that should be kept in mind when the estimate is made. Thus, the total resources in trade and transport at purchasers' prices have a value of zero, since all of the economic value generated (including output plus taxes) is incorporated in the value of the goods at purchasers' prices.

Figure 4: Diagram of the adjustment vector for taxes (net of subsidies) on products.

	Total resources at basic prices	Distribution margins (trade and transport)	Taxes (net) on products	Total resources at purchasers' prices
Goods	a	+b	+ Ta + Tb	a + b + Ta + Tb
Trade and transport services	b	-b	0	0
Total	a + b	0	+ Ta + Tb	a + b + Ta + Tb

a: Output of goods at basic prices.

b: Output of trade services and transport services at basic prices. It is assumed that all of the output of transport services comprises margins.

Ta: Taxes (net) on goods. / Tb: Taxes (net) on trade and transport.

The total figures for taxes are those provided by the Audit Office in the General Government Accounts by type of tax.

In practical terms, breaking down the tax matrix product-to-product, there are some aspects should be highlighted:

- Related to Value Added Type taxes (D.211), it could be distributed to three uses:

  – Intermediate demand: VAT collected from acquisitions, mainly in exempt branches, is estimated by applying the tax rates for each product in the Supply and Use Table of the reference year (intermediate consumption of exempt branches prior to final equilibrium resources-uses). It should be noted that there are VAT rates on certain products which are not deductible for any economic operator (exempt and non-exempt branches).

– Gross capital formation: estimates of gross capital formation by assets and products for exempt industries of the economy are available for the reference year, and the percentage of deductibility estimated for intermediate consumption of each industry in the former category (taking into account, as auxiliary information, figures from the Tax Agency on revenues by non-deductible VAT by branch of activity) are used to determine the VAT collected on such gross fixed capital formation.

– Final consumption expenditure: taking into account the tax rates prevailing in each case according to the intersection between COICOP code and product, VAT is distributed in each product of final consumption expenditure of households. A breakdown of VAT applied in social transfers in kind acquired on the market by the General Government is also performed product-to-product.

• Related to taxes and duties on imports (D.212), they are distributed by products in proportion to imports from third countries by geographical areas registered in the Statistics on IMTS and by branch of activity in proportion to the estimates of the use table of the reference year (before the final resource-use balancing).

• Related to the remainder taxes on products (D.214), there are some major categories that are directly applicable to products, as in the case of the special taxes (tobacco, alcohol, petrol, electricity, etc.) and specific taxes (means of transport, documented legal transactions, gambling or insurance). Its distribution by branches or between intermediate consumption and expenditure of households is performed according to each type of tax as described in section 3.

• Related to subsidies on products (D.31), they are broken down by products according to the purpose of the subsidy, through the information provided by Audit Office and the national coordinating body (FEGA) for all payments from Common Agricultural Policy. Its distribution by industry is performed according to each type of subsidy.

Once the four previous components are distributed by product and uses, net taxes on products is prepared in matrix form as taxes less subsidies.

6.1.3.3 Some additional considerations about the balancing process

– The general philosophy for compiling supply and use tables and their role in estimating national accounts aggregates is the same as that used in previous accounting bases.

– The basic restrictions which affect the balancing process are those that derive from an issue which has already been mentioned: the necessity of leaving certain primary sources of information unchanged, as in the case of the figures related to public administrations that are provided by the IGAE, the financial corporations sector and rest of the word sector (provided by the Central Bank). Also, totals estimated for NPISH and illegal activities are, in principle, less subject to revision. Any variation in those figures has to entail a corresponding modification in the national accounts transactions that derive from them. It should be noted that some market industries on which any change is considered unusual because its estimate for the supply side is known to have been very precise because of the quality of its sources (for example, because the refining sector is concentrated in very few companies, information is obtained from the Structural Business Survey and is of high quality as all the companies have been thoroughly researched).

– When balancing by products, the following are especially taken into account: tobacco, retail and wholesale, insurance, R&D, FISIM (within the financial intermediation products) and, in general, all those who have a very small amount of intermediate consumption in the market industries.

– Discrepancies by products are analysed from the perspectives of rows and columns simultaneously. That is, when observing a supply-use imbalance in a product, the aggregates where the highest amounts of the product are concentrated are first analysed, followed by its evolution over the previous year. The qualitative information on the robustness and quality of the various sources of information used for each aggregate is also taken into account. If an atypical annual evolution is found in any aggregates, it is investigated in greater depth and, the findings of this in-depth study used to change the estimate. Sometimes, if the criteria for distribution among certain products are not excessively rigid, products are adjusted without altering the totals of the columns.

– The balancing process can lead to improved estimates of some variables. Since the measurement of products forming part of the Gross Fixed Capital Formation (GFCF) assets is generally one of the areas where information is scarce, the balancing of SUTs products improves the estimate in these cases. It is especially relevant in the products that are part of transport equipment and construction assets. In both cases GFCF estimates are made and subsequently reviewed with the data obtained from products in the SUTs at origin and destination. Discrepancies in the products are analysed in great detail and investigations are conducted ad hoc (contacts with the Customs Office or weapons assets, etc.) to verify that the amounts by products in the various aggregates are being measured correctly and with the same periods.

– all estimates for aggregates (P1 and P2 in market industries) due to the non-observed economy have been produced and entered in the process of compiling the SUTs. During the balancing adjustment process, the output and intermediate consumption of the non-observed economy have also been modified. So, through an iterative procedure, estimates of non-observed economy are recalculated with variations in observed economy data resulting from the balancing adjustments, and adjustments are also applied where the balancing determines. In this process of confrontation of supply and demand, in some cases, activities for which it has been decided that the non-observed economy is relevant become non-relevant and vice versa, cases in which, although the previous investigation did not detect the presence of relevant non-observed economy. Finally, once the manual adjustments were finished, and before executing RAS (automatic equilibrium) a product-by-product review was made comparing the supply-use differences with the existence or not of non-observed economy. In this last review, final adjustments of the non-observed economy were made. When imbalances were positive (more resources than uses) in products being produced by industries with non-observed economy, negative adjustments have been done to non-observed P1, and when imbalances were negative, those adjustments have been positive in non-observed P1.

– As it has been already mentioned in chapter 3, some elements have been included in both sides, supply and use, and, therefore, are balanced, so, they have not suffered any change in the balancing procedure. Those elements are:

- For market output:
  - "Subsidies on products" are obtained from administrative records.
  - "Own-account production".
- For market intermediate consumption:

- "The cost of the insurance service" is obtained accordingly to ESA-2010 definitions.
- "FISIM"

– Automatic adjustment is quite residual, since as mentioned earlier, detailed serious imbalances are analysed in depth and automatic adjustments are only made when the amounts of imbalance by products are not very high and intermediate consumption of the products with imbalances are comparatively high and are distributed evenly across all the industries. These automatic adjustments are only made once the total imbalance is zero, and apply to the intermediate consumption for market industries by products.

– Also, it should be mentioned that estimating the variables of national accounts occurs on an ongoing basis, over time. In fact, one of the most important applications of the national accounts is to cross-check the changes in the economic system and its components over time.

Furthermore, the data for any given year are subjected to revisions within the national accounts, resulting from updates in the sources or the estimating methods. For example, in Spain the data for any given year in the series do not reach the status of *final* until the end of three years after the reference period. During those three years, there are different versions of the macroeconomic variables. All balancing adjustments made to each product and each aggregate are kept on the work files, so they can be viewed and reviewed at any time. If the adjusted data are not definitive, in subsequent years the adjustments are reviewed and when the SUT is available they are reviewed based on imbalances by products and may undergo changes on important occasions.

Consequently, the revisions will come up against the obvious constraint that an earlier estimate exists, and that the relevant changes of a major scale must be properly analysed and explained not only internally but also to external users. In fact, a press release about the revisions in the series of National Accounts always completes the dissemination of the annual series of National Accounts data.

To conclude, as stated in the ESA 2010, "the input/output framework of the economy provides an ideal setting for balancing supply and demand, facilitating the integrated estimate of the Gross Domestic Product of the economy, at both current and constant prices". Moreover, "these tables enable the logic and coherence of the components of the national accounts to be examined in a single detailed chart and, by incorporating the components into it the three approaches used to measure gross domestic product (production, income and expenses), it allows for a single estimate of the GDP".

Therefore, it is considered essential to make a full estimate of all aggregates within the Input-Output framework to obtain a robust estimate of GDP in the three approaches. The balancing, integration and validation processes of all figures are considered essential.

6.1.4 LEVELS OF DISAGGREGATION

The general approach adopted with regard to levels of disaggregation of products and activities at working level is to attempt to reach the maximum level of disaggregation possible taking into account the following issues:

i) Availability of statistical sources.

This one appears to be the most important factor: the existence of complete statistical sources on the various components in the accounts. A high level of disaggregation does not always guarantee more reliable estimates of GDP, since it might be the case

that the relevant requirements of statistical coverage had not been met. For example, there is no point in talking about high levels of disaggregation if there is not a minimum statistical base for the components of the account of goods and services and the estimate has to be based mainly on assumptions (output, imports, intermediate demand, and components of final demand).

If on top of all of those considerations, the issue of the differences in the valuation criteria is also taken into account; there is a need to proceed rather cautiously when setting criteria on the optimum levels of disaggregation in the supply/demand balances (accounts of goods and services).

ii) Accounting consistency.

This arises out of the above considerations. As an example, we may consider the matter of valuations. Even assuming that a highly disaggregated system of information is available for all of the fundamental variables of supply (output and imports) and demand (intermediate and final), rendering the two approaches compatible with one another implies the need to estimate the transactions which permit the valuation of the supply -usually in the statistics at basic prices- to be made compatible with that of the demand -by definition at purchasers' prices-, and to do so with whatever degree of breakdown has been chosen to draw up those balances or commodity flows.

iii) Another type of statistical constraint is the need for statistical confidentiality, in those cases in which it is possible to identify specific producer and/or institutional units on the basis of macroeconomic data.

iv) Human and IT resources.

Here we may note a second and no less obvious constraint on the choice of optimum breakdown of products and activities: the need for sufficient human resources to provide a detailed and solid analysis at the chosen level of disaggregation combined with the IT systems which simplify the mechanical tasks.

v) Need for comparability with the international context.

In this case, this comparability is framed by the scope of the ESA Regulation and other European regulations.

vi) Other considerations: to suitably represent the economy of the country and improve the quality of the balancing process.

On some occasions, there is an interest in emphasising certain aspects of an economic system, introducing more disaggregation into the standard classifications to make it possible to consider these specific issues. Also, it has been necessary to distinguish between market and non-market producers (Public Administration units and NPISH units) within industries due to the differences in the valuation of their production and in their demand uses.

So, the level of disaggregation adopted at a working level of the SNA is the result of combining all of those aspects listed in the preceding section and it is materialised in 102 NACE breakdown for market industries (distinguishing between S.11, S.12 and S.14), 10 different NACEs for S.13 and four industries for S.15 and 140 products in all aggregates except for non-market industries, with 119 products.

The published breakdown level is larger than the one required in ESA Regulation, 81 industries and 110 products.

6.2 Other approaches used to validate GDP

In short, Supply and use tables are used to determine the final level of GDP.

It should be noted however, in addition to what has already been explained, that first in the estimation process, and then during balancing, the ratios between main aggregates such as the apparent productivity of the labour factor and its growth, production-related intermediate consumption ratios, employee remuneration in relation to productivity and the like are calculated. This means the estimates can be checked ex po.