INSTITUTO NACIONAL DE ESTADÍSTICA

# Quarterly National Accounts of Spain: main aggregates

# Inventory of sources and methods

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## 1. Description of the system for the Quarterly National Accounts of Spain: main aggregates

### 1.1 Organisation and institutional arrangements

#### 1.1.1 Description of organisation and responsibilities in the compilation of the Quarterly National Accounts of Spain: main aggregates

The National Institute of Statistics (INE) is an autonomous administrative body, with legal 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 803/2022 of October 4[1].

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. 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.

According to the Statute of the INE, the Directorate-General of National Accounts reports to the Presidency of the National Institute of Statistics (INE) and holds the rank of a Directorate-General. Its mandate is to design and implement the statistical operations related to national and regional accounts that fall within the remit of the INE, and to represent the Institute in national and international discussions and decision-making in matters under its responsibility.

The organisational structure of the Directorate-General of National Accounts consists of the Subdirectorate-General of Annual Accounts, the Subdirectorate-General of Quarterly Accounts, and the New Developments Division.

[1] Consolidated text (last amended on 8th July 2022)

The Director-General of National Accounts is also a member of the Board of Directors of the INE. According to the current National Statistical Plan, the INE is responsible for the preparation and dissemination of all statistical actions that make up the national and regional accounts system, both annual and quarterly, with the exception of the General Government Accounts, which are overseen by the Audit Office (IGAE), and the financial accounts of the institutional sectors of the national economy, which correspond to the Central Bank (Banco de España).

In particular, the INE elaborates the Quarterly National Accounts of Spain: main aggregates (QNAS)[2]. This operation is a short-term summary statistic whose main objective is to carry out a systematic and coherent measurement of the recent evolution of the national economy, in accordance with the conceptual and regulatory framework established by the European System of National and Regional Accounts (ESA 2010), approved by Regulation (EU) 549/2013 of the European Parliament and of the Council of 21 May.

The QNAS arises from the need to have information on the evolution of a national economy faster than that provided by the annual national accounts and more comprehensive and integrated than that contained in the short-term indicators. In this sense, it can be defined as a short-term synthesis statistic, available with a reduced time lag, whose main objective is to provide a quantitative, global and coherent description of economic activity.

### 1.1.2 Organizational scheme of the Directorate-General of National Accounts, INE (Spain)

There are 52 staff members[3] assigned to the Directorate-General of National Accounts, 3 of whom are administrative assistants and 49 specialised technical staff (51 of them are civil servants). The department is structured into the following units:

- **Subdirectorate-General of Annual Accounts**, which is responsible for the compilation, analysis and methodological development of annual national accounts, the input-output framework, regional accounts, and the annual non-financial accounts of institutional sectors, as well as participation in the annual and multi-annual cycles for the verification of Gross National Income as established in European legislation.
- **Subdirectorate-General of Quarterly Accounts**, which is responsible for the compilation and analysis of quarterly national accounts and the quarterly non-financial accounts of institutional sectors, as well as methodological research on the use of short-term indicators and seasonal adjustment techniques in the production of quarterly accounts, in cooperation with the relevant INE units.
- **New Developments Division**, which is responsible for the promotion, execution and analysis of statistics within the framework of the European System of Accounts and the United Nations System of National Accounts in the areas of digitalisation, sustainability and household well-being, as well as other fields introduced in these systems, and for fostering the use of new data sources and innovative statistical techniques to enhance the efficiency and quality of national accounts statistics.

[2] Operation 30024 of the Inventory of Statistical Operations
[3] As of June 25, 2026

## 1.2 Publication schedule, revision and dissemination policy

### 1.2.1 General aspects

Regarding dissemination, the INE publishes its Statistics Availability Calendar[4] for each year in the last quarter of the previous year, showing the exact dates of the publication of short-term statistics and the month of publication of the structural statistics; subsequently, on the last Friday of each month (t) the exact day of publication of the structural statistics scheduled for the month (t+2) is announced.

The data is disseminated simultaneously, according to the publication schedule, for all users, in most cases accompanied by a press release. At the same time, the data is published on the INE website (www.ine.es). Some users also receive the information with a minimum notice under embargo, in the terms established in the Code of Practice for European Statistics[5].

Likewise, the INE has a policy that regulates the basic aspects of the revision of statistical data, guaranteeing the transparency of the processes and the quality of the products. This policy is described in the document approved by the Board of Directors at the meeting held on March 13, 2015[6].

### 1.2.2 Publication schedule, revision and dissemination policy

A flash estimate of the results is released one month after the end of the quarter (**t + 30** days, where *t* is the reference quarter). The results of each quarter are revised around **t + 90** days, incorporating all information available since the flash estimate and including updated results for the previous quarters of the current year *T*.

In addition, in the case of the second quarter of each year, revised results are published from the first quarter of year T-3, in consistency with the results review policy of the Annual National Accounts of Spain.

At least every five years, extraordinary reviews of the complete results series must be carried out to guarantee the updating of statistical sources and estimation methods, as well as their alignment with the recommendations released by the relevant international forums.

This calendar allows for compliance with the requirements established in the Programme for the Transmission of National Accounts Results to the European Commission in ESA 2010[7] and follows the European recommendations on the policy to review current macroeconomic statistics[8].

## 1.3 General compilation procedure

The quarterly accounts constitute a subsystem of the National Accounts of Spain, which are fully integrated both methodologically and numerically. This implies that, in particular, the principles, definitions, accounting rules and structure used in this operation are the

[4] https://www.ine.es/daco/daco41/calen.htm
[5] https://www.ine.es/ine/codigobp/codigobupr.pdf
[6] https://www.ine.es/ine/codigobp/politica_revision.pdf
[7] Regulation (EU) 2023/734 of the European Parliament and of the Council of 15 March 2023 amending Regulation (EU) No 549/2013 on the European system of national and regional accounts in the European Union and repealing 11 legal acts in the field of national accounts
[8] *Commitee on Monetary, Finance and Balance of Payments Task Force on a Harmonized European Revision Policy y DMES Task Force on Benchmark Revisions.*

same as those used in the annual accounts and are established in *Regulation (EU) 549/2013 on the 2010 European System of National Accounts and Regionals*[9]. The quarterly estimates provided in the framework of the National Accounts of Spain (QNAS and QNFIS[10]) are fully consistent with each other and with the annual estimates.

Based on the *Eurostat Quarterly Accounts Manual*[11], the compilation process includes the integration of direct results of other operations of the system (for example, accounts of the Public Administrations and balance of payments). In areas where these are not available, indirect methods are used in which all available quantitative information is used on the evolution of an aggregate (or part of it) between two periods.

Regarding the scope of the estimates, it should be noted that the quarterly GDP and all its components are estimated from the point of view of supply, demand and income, being reconciled within the framework of an accounting balance process described in the following section.

### 1.4 Balancing, benchmarking and other reconciliation procedures

Reconciliation procedures are aimed at guaranteeing compliance with both longitudinal restrictions (the temporal consistency of the quarterly and annual estimates) and transversal (the satisfaction of certain accounting identities).

We can distinguish the following phases:

- Temporal reconciliation of the components, through the application of benchmarking techniques that follow the recommendations of the *ESS Guidelines on temporal disaggregation, benchmarking and reconciliation*[12].

- Balance of GDP to reconcile the preliminary estimates obtained in the supply and demand approaches, based in each case on their own sources.

  When the annual accounts for the period are available, a procedure of temporal disaggregation and balance of GDP is used from the supply and demand approaches, consistent with the recommendations of the ESS Guidelines on temporal disaggregation, benchmarking and reconciliation; in recent periods, for which no annual accounts are available, equilibrium is reached through a systematic iterative procedure of approximating the estimates of the supply and demand approaches.

  Finally, equilibrium with the income approach is reached by estimating the Gross Operating Surplus/Gross Mixed Income as the difference between the quarterly GDP and the rest of the components of the income approach to the quarterly GDP (again, in the periods with available annual accounts, the estimates of said components are the result of a temporal disaggregation procedure that follows the international recommendations for this purpose).

[9] Amended by Regulation (EU) 2023/734 of the European Parliament and of the Council of 15 March 2023
[10] Quarterly Non-Financial Accounts for the Institutional Sectors
[11] https://ec.europa.eu/eurostat/documents/3859598/5936013/KS-GQ-13-004-EN.PDF/3544793c-0bde-4381-a7ad-a5cfe5d8c8d0
[12] https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-06-18-355

### 1.5 Volume estimates

With regard to the chaining method and weights, quarterly indices chained annually with annual weights and **the *Annual Overlap* method are used** (the links in the chain take as a reference the average value of the aggregate of the previous year to the average prices of that year)[13], due to the fact that it provides indices consistent with the annual chained indices, as this technique is totally aggregative (the average of the indices of the quarters coincides with the annual index), its simplicity of calculation and is the usual practice in other European countries.

### 1.6 Seasonal and calendar adjustment

The series of quarterly macroeconomic aggregates are published both unadjusted (original or gross series) and adjusted for seasonal and calendar effects.

The seasonal and calendar effects adjustment is made to each of the quarterly macroeconomic aggregates that make up the QNAS, both to the series at current prices and to the series of linked volume indices, obtaining the series of deflators implicitly.

The preparation of the seasonally and calendar adjusted results covers both the signal extraction process, which includes the treatment of seasonal adjustment and calendar effects, and the procedures that guarantee annual consistency between the raw data and the seasonally adjusted data.

The procedures applied comply with the recommendations published in the quarterly accounts manuals (Eurostat, 1999/2013 and IMF 2001/2016) and related to seasonal adjustment (*ESS guidelines on seasonal adjustment, 2015*) and with the *INE Standard for adjusting seasonal and calendar effects in short-term series, 2019*[14].

A parametric approach is used, based on regression models with ARIMA errors, identifying and estimating a priori a model that adequately fits the observed series and deriving from the same appropriate models for each of the components of the series (cyclo- trend, seasonal and irregular).

### 1.7 Additional information

Links (in Spanish and English) to the INE publications on the Economic Accounts, which provide comprehensive information on this operation and on the other operations that form part of the National Accounts framework:

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

[13] ESA 2010 12.36 “The annual overlap technique uses the annual average values of the previous year at prices of that year. Adding the quarterly volume measures calculated with this technique for a given year, identical series are obtained to the chained volume measures independently estimated in the annual national accounts. On the other hand, the variation rates from one quarter to another within the same calendar year, between the first and the fourth quarter, are not affected by the jumps. However, the volume series are affected by the jumps that occur between the fourth quarter of one year and the first of the following year, which is also reflected in the respective quarter-on-quarter rate of change"

[14] https://www.ine.es/clasifi/estandar_efectos_estacionales.pdf

## 2. QNAS publication schedule, review and dissemination policy

### 2.1 Dissemination policy

In t+30 days, a flash estimate of the GDP generated in the economy during the quarter t and of each of its components is offered, from its three approaches of supply, demand and income (both in volume terms and at current prices in the case of of the first two and at current prices in the case of the income approach). It also provides a measurement of the evolution of employment in the economy in terms of persons employed, jobs, full-time equivalent jobs and hours actually worked.

All estimates are also provided in both non-seasonally and calendar unadjusted form, and adjusted for seasonal and calendar effects. As mentioned above, this is a provisional estimate based on all the information available to date for the reference quarter.

Around t+90 days, the results are reviewed incorporating all the information available from the flash estimate, in particular, the results of the quarterly *Balance of Payments/International Investment Position* and of the *Quarterly Non-Financial Accounts of the General Government*. Updated results of the previous quarters of the current year T are also published and the results on national income and national disposable income are incorporated. In addition, in the case of the dissemination of the estimates corresponding to the second quarter of each year, revised results are disclosed from the first quarter of year T-3, in consistency with the results review policy of the Annual National Accounts of Spain.

At least once every five years, extraordinary reviews of the complete results series must be carried out to guarantee the updating of statistical sources and estimation methods, as well as their alignment with the recommendations released by the relevant international forums.

The data are disseminated simultaneously, following the publication calendar, to all users via the INE website[15]. They are accompanied by a press release and, for the Flash estimate, by a technical note providing the breakdown of indicators for which early information has been supplied by the source.

### 2.2 Disseminated content

The Gross Domestic Product and each of its components are disseminated, both in non-seasonally and calendar unadjusted form, and adjusted for seasonal and calendar effects, from its three approaches of supply, demand and income, in terms of volume and current prices in the case of the first two and at current prices in the case of the income approach.

It also provides a measure of the evolution of employment in the economy in terms of *persons in employment, jobs, hours actually worked* and *full-time equivalent jobs*.

The corresponding inter-annual and quarter-on-quarter variation rates of each aggregate and contributions to GDP growth of *national demand, external demand* and *the changes in inventories* are also disseminated.

[15] Results of *Quarterly National Accounts of Spain: Main Aggregates* https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736164439&menu=ultiDatos&idp=1254735576581

The main results also include the year-on-year variation in productivity and labour cost indicators, adjusted for seasonal and calendar effects, as well as the wage rate.

- ***Productivity per full-time equivalent job***: volume index of GDP per full-time equivalent job.
- ***Productivity per hour actually worked***: volume index of GDP per hour actually worked.
- ***Compensation for equivalent salaried job***.
- ***Unit labour cost***: remuneration per salaried equivalent job between productivity per full-time equivalent job.
- ***Salary rate***: number of full-time equivalent employee jobs divided by the number of full-time equivalent jobs in total employment for the whole economy***.***

The branches of activity are grouped and coded in reference to the 2009 National Classification of Economic Activities (NACE REV. 2). Specifically, the breakdown of the Gross Value Added, the compensation of employees and their components and the employment estimates is offered with the following breakdown:

- Agriculture, forestry and fishing (Section A, NACE REV. 2)
- Manufacturing, mining and quarrying and other industry (Sections B-C-D-E, NACE REV. 2)
    - Of which: manufactured products (Section C, NACE REV. 2)
- Construction (Section F, NACE REV. 2)
- Services (Sections G to T, NACE REV. 2)
    - Services. Wholesale and retail trade services; Transportation and storage; Accommodation and food services (Sections G-H-I, NACE REV. 2)
    - Services. Information and communication (Section J, NACE REV. 2)
    - Services. Financial and insurance activities (Section K, NACE REV. 2)
    - Services. Real estate activities (Section L, NACE REV. 2)
    - Services. Professional, scientific and technical services; Administrative and support services (Sections M-N, NACE REV. 2)
    - Services. Public administration and defence services, compulsory social security services; Education services; Human health and social work services (Sections O-P-Q, NACE REV. 2)
    - Services. Arts, entertainment and recreation services; Other services; Private households as employers (Sections R-T, NACE REV. 2)

Information is also provided on taxes on products (D.21) and subsidies on products (D.31).

In the case of the **demand approach**, estimates are provided of:

- **Domestic demand**:
  - Final consumption expenditure
  - Household final consumption expenditure and the NPISHs
  - Household final consumption expenditure
  - Household domestic final consumption expenditure
    - Household domestic final consumption expenditure, durable goods
    - Household domestic final consumption expenditure, other durability
      - Household domestic final consumption expenditure, non-durable goods
      - Household domestic final consumption expenditure, semi-durable goods
      - Household domestic final consumption expenditure, services
  - NPISHs final consumption expenditure
  - Final consumption expenditure by General Government
    - Final individual consumption expenditure by General Government
    - Final collective consumption expenditure by General Government
  - Actual individual consumption (AIC)
  - Gross capital formation
    - Gross fixed capital formation
      - GFCF. Tangible fixed assets
        - GFCF. Tangible fixed assets. Construction
          - GFCF. Tangible fixed assets. Construction. Dwellings
          - GFCF. Tangible fixed assets. Construction. Other buildings and structures
        - GFCF. Tangible fixed assets. Machinery, capital goods and weapons systems
          - GFCF. Tangible fixed assets. Machinery, capital goods and weapons systems. Transport equipment
          - GFCF. Tangible fixed assets. Machinery, capital goods and weapons systems. Other
        - GFCF. Tangible fixed assets. Cultivated biological resources
      - GFCF. Intangible fixed assets. Intellectual property products
    - Changes in inventories and acquisitions less disposals of valuables
      - Changes in inventories
      - Acquisitions less disposals of valuables

- **External demand:**
  - Exports of goods and services
    - Exports of goods
    - Exports of services
      - Exports of services. Expenditure of non-resident on the economic territory
  - Imports of goods and services
    - Imports of goods
    - Imports of services
      - Imports of services. Expenditure of resident in the rest of the world[16]

### 2.3 Special transmissions

All data tables required in the ESA 2010 Transmission Programme[17] They are transmitted to Eurostat via the EDamis (Electronic Data files Administration and Management Information System) file exchange system in SDMX-ML format.

Some users receive information under embargo in the terms specified in the Code of Good Practice for European Statistics.

### 2.4 Metadata policy

The standardized methodological reports constitute the reference metadata that accompany the data of the statistical operations and that allow for knowledge, in a systematic, homogeneous and structured way, of the content, methodologies and quality aspects associated with each statistical operation.

The Board of Directors of the INE approved the standard structure of the methodological report[18] at its meeting on December 13, 2011, this standard being applicable to all statistical operations that publish data since 2012.

These reports or sheets are based on the ESMS (Euro SDMX Metadata Structure) structure determined by the Commission Recommendation, of June 23, 2009, on the reference metadata for the European Statistical System[19].

The QNAS standardized methodological report can be found at the following link:

https://www.ine.es/dynt3/metadatos/es/RespuestaDatos.html?oe=30024

[16] NPISHs: Non-Profit Institutions Serving Households
GFCF: Gross Fixed Capital Formation
[17] Annex B of REGULATION (EU) No 549/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of May 21, 2013 on the European System of National and Regional Accounts of the European Union (Relevant text for SES purposes).
[18] https://www.ine.es/clasifi/estandar_informe_metodo.pdf
[19] https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:168:0050:0055:ES:PDF

## 3. General approach

### 3.1 General architecture of the system of compilation

The quarterly accounts constitute a subsystem of the National Accounts of Spain, which are fully integrated both methodologically and numerically. This, in particular, implies that the principles, definitions, accounting rules and structure used in the QNAS are the same as those used in the annual accounts and are established in *Regulation (EU) 549/2013 on the 2010 European System of National Accounts and Regionals*[20]. The quarterly estimates provided in the framework of the National Accounts of Spain (QNAS and QNFIS[21]) are fully consistent with each other and with the annual estimates.

Based on the *Eurostat Quarterly Accounts Manual*[22], the QNA compilation process includes the integration of direct results from other operations of the national accounts system:

- *Account of foreign exchanges of goods and services of the Accounts of the Rest of the World* (consistent with the results of the *Trade Balance of the Balance of Payments and International Investment Position*, published by the Bank of Spain) and prepared, basically, from the foreign trade statistics of the Customs and Excites Department of the Tax Agency (AEAT), the *International Trade in Services Survey* (ITSS)[23] and the *Tourist Expenditure Survey* (EGATUR), prepared by the INE.
- *Quarterly Non-Financial Accounts of General Government*, the monthly series of non-financial operations carried out by the aggregate of the *Central Administration, Regional Administration and Social Security Funds* subsectors[24] and the monthly series of taxes and social contributions[25], prepared by Audit Office (IGAE).
- Accounts of the *Financial Corporations* sector, drawn up mainly from accounting information of the entities that compose it, provided by the supervisory bodies (Bank of Spain, Stock Market Commission and Directorate of Insurance and Pension Funds of the Ministry of Economy, Trade and Business).

In the rest of the areas, **indirect methods** are employed **that make use of all the current quantitative information available on the evolution of an aggregate** (or part of it) in the period:

- In periods for which annual accounts results are available, the quarterly estimate of each component of the GDP in terms not adjusted for seasonal and calendar effects, at current prices and in terms of volume, as well as the balanced GDP and its supply and demand components, are obtained from the *Multivariate*

[20] Amended by Regulation (EU) 2023/734 of the European Parliament and of the Council of 15 March 2023
[21] Quarterly Non-Financial Accounts for the Institutional Sectors
[22] https://ec.europa.eu/eurostat/documents/3859598/5936013/KS-GQ-13-004-EN.PDF/3544793c-0bde-4381-a7ad-a5cfe5d8c8d0
[23] The INE has discontinued the publication of this statistical operation, although it continues to compile it for use as an input to the Balance of Payments statistics and the National Accounts of the Spanish economy, as well as to the two new annual statistics that began to be published in 2024 to replace the ECIS: International Trade in Services by Enterprise Characteristics (STEC) and International Trade in Services by Modes of Supply (MoS)
[24] https://www.igae.pap.hacienda.gob.es/sitios/igae/es-ES/Contabilidad/ContabilidadNacional/Publicaciones/Paginas/DatosConsolidados.aspx
[25] https://www.igae.pap.hacienda.gob.es/sitios/igae/es-ES/Contabilidad/ContabilidadNacional/Publicaciones/Paginas/iaimpuestosycotizaciones.aspx

*Denton Method*[26]. However, the application of said algorithm is carried out after analysing all the available information, and the resulting corrections on the preliminary estimates are carried out in the accounting aggregates that may present a lower accuracy. In the case of the rest of the aggregates, the method takes as inputs the direct results of other national accounts operations mentioned and the latest available quarterly estimate.

– In recent periods (for which annual accounts results are not yet available), the quarterly estimate of each component of GDP in terms not adjusted for seasonal and calendar effects, at current prices and in volume terms, is obtained by extrapolating their inter-annual variation rates, based on the evolution observed on the base synthetic indicator designed to capture the short term movement of the aggregate.

The process of estimating the quarterly GDP and its supply and demand components thus follows the following steps:

1. Preliminary estimate of the components of GDP at current prices and in volume, not adjusted for seasonal and calendar effects, from the point of view of supply and demand.
2. Estimate of balanced GDP in volume terms.
3. Adjustment for seasonal and calendar effects and benchmarking[27] of GDP in volume terms.
4. Balance and benchmarking of the components of GDP in terms of volume not adjusted for seasonal and calendar effects to GDP.
5. Estimation of the components of GDP at current prices.
6. Preliminary seasonal and calendar adjustment of the components of GDP in volume and current prices.
7. Balance and benchmarking of GDP components in volume terms and current prices adjusted for seasonal and calendar effects to GDP.

In parallel, the estimation of the components of GDP at current prices is carried out from the income approach. The balance of this approach is guaranteed by estimating the *Gross Operating Surplus/Gross Mixed Income* by difference of the GDP aggregate and the rest of the components of the income approach. The employment variables by branch of activity are also estimated.

Finally, a global assessment of all the information is carried out, carrying out numerous checks on the consistency and viability of the estimates.

The results obtained also pass all the validation controls established by Eurostat on the national accounts data transmitted in compliance with the ESA 2010 regulation.

[26] Denton, F.T. (1971) “Adjustment of monthly or quarterly series to annual totals: an approach based on quadratic minimization”, Journal of the American Statistical Association, vol. 66, n.333, p. 99-102. The extension to the multivariate case of the Denton method is described in Di Fonzo, T. (1994) "Temporal disaggregation of a system of time series when the aggregate is known," INSEE-Eurostat Workshop on Quarterly National Accounts, Paris, December and in Di Fonzo, T. and Marini, M. (2003): "Benchmarking systems of seasonally adjusted time series according to Denton's movement preservation principle."

[27] To ensure consistency between the annual aggregation of the seasonally and calendar-adjusted quarterly GDP and the available annual GDP series (under the assumption that the calendar effects of a period greater than one year are not significant).

### 3.2 Balancing, benchmarking and other reconciliation procedures

#### 3.2.1 Reconciliation with the annual accounts

The coherence of the results of the QNAS and the annual aggregates of the national accounts is guaranteed for those aggregates that result from the direct integration of the results of other operations of the national accounts (*exports* and *imports* of goods and services at current prices, *final consumption expenditure* of *General Government* and *Gross Value Added* at current prices of section K Financial and Insurance Activities of NACE REV. 2[28], taxes less subsidies).

In the rest of the aggregates, this consistency is achieved in the compilation process followed by means of temporal disaggregation and benchmarking techniques, all based on the recommendations of the *ESS guidelines on temporal disaggregation, benchmarking and reconciliation*[29].

#### 3.2.2 GDP quarterly equilibrium procedure

The preliminary estimate of each aggregate is, in general, not balanced from the accounting point of view. It is therefore necessary to reconcile such preliminary estimates in such a way as to guarantee the fulfilment of all the accounting identities inherent in the national accounts system. The accounting balancing process is an integral and fundamental part of the methodology used to compile the national accounts.

In this case, the aim is to reconcile the estimates initially obtained from the quarterly aggregates to guarantee all the accounting identities inherent in the National Accounts framework and, therefore, the economic relationships between them, thus obtaining an understandable representation of the behaviour of the economy in each quarter. The final product of this process will be a set of fully balanced accounts, with a single and definitive estimate of the quarterly GDP, and of the different components from all three perspectives.

To begin with, in this balancing process, all preliminary quarterly estimates of the quarterly aggregates are susceptible to being modified to achieve accounting balance, except for those resulting from the integration of results from other national accounts actions. In addition, it is carried out separately for the results not adjusted and adjusted for seasonal and calendar effects:

- For periods for which annual accounts results are available, the balancing of GDP and its components in each of the approaches is obtained using the *Multivariate Denton Method*. As already mentioned, the algorithm is applied after analysing all the available information, so that the resulting adjustments to the preliminary estimates are made only in those accounting aggregates whose accuracy is considered lower.
- For recent periods (for which annual accounts results are not yet available), balancing is carried out through a systematic iterative procedure that progressively aligns the estimates from the supply and demand approaches, based on the ongoing assessment of their quality and on consistency checks against all the auxiliary information available on the quarter's economic developments. The final outcome is a single measurement of quarterly Gross Domestic Product (GDP) and each of its components — from the supply, demand

[28] National Classification of Economic Activities
[29] https://ec.europa.eu/eurostat/documents/3859598/9441376/KS-06-18-355-EN.pdf

and income perspectives — at both current prices and in volume terms, fully consistent with the annual estimates.

### 3.2.3 Other conciliation processes

Before finalising the result obtained in the previous step, a validation and consistency and viability checking process is carried out, in which a number of analysis and contrasts are performed. The most relevant of these include:

- Analysis of the evolution of the aggregate (quarter-on-quarter and year-on-year growth rates) in comparison with all available base short-term source data, both those used to construct the corresponding synthetic indicator, and any other complementary high-frequency information that is considered relevant to explain the behaviour of the aggregate.
- Consistency analysis of derived indicators, such as implicit deflators, productivity, average wages, unit labour costs, etc.
- Revision analysis.
- Analysis of the viability of the *Gross Operating Surplus/Gross Mixed Income* obtained as a balancing item, comparing it with the available external information.
- Analysis of the seasonal factors, once the seasonally adjusted and calendar estimates have been reconciled.

## 3.3 Volume estimates

### 3.3.1 General policy regarding volume

Since 2005, all statistical operations that make up the National Accounts of Spain adopted the use of chain-linked indices to measure changes in volume. According to the principles established in the ESA 2010 (Chapter 10), the type of index used for the measurement of volumes is a Laspeyres index and, consequently, a Paasche index is used for the implicit measurement of prices.

According to the ESA 2010 principles (Chapter 12) regarding the chaining method and the use of weights, quarterly indices are chained annually with annual weights, using the *Annual Overlap method*. In this approach, the links in the chain take as a reference the average value of the aggregate in the previous year at the average prices of that year. This method is adopted because it produces indices that are fully consistent with the annual chained indices, given that it is strictly aggregable (the average of the quarterly indices matches the annual index), it is straightforward to compute, and it is the standard practice in many European countries.

The weights take as a reference the structure generated by the annual accounting for the immediately preceding year. In this way, structural compatibility between the annual and quarterly accounts is ensured, at the same time that no additional sources of seasonal and irregular variation are introduced in the calculation of the indices, due to the (annual) frequency of said weightings.

Measurements in volume terms can be expressed both as index numbers and in monetary terms. The two types of data give rise to the same rates in their evolution over time. In the case of the QNAS, only the chain-linked volume series expressed as indices are published, although it is easy to deduce the same series expressed in monetary terms.

The application of this methodology generates a loss of additivity in the chained volume measurements of an aggregate and its components, except in the data corresponding to the reference years and the one immediately after. Non-additivity is a direct consequence of the mathematical properties of the valuation system, so the differences do not reflect any deterioration of quality in the measurement process. The discrepancy increases as we move away from the reference period. Data at prices from the previous year are always additive.

For the aforementioned reasons, the dissemination of the QNAS data focuses on the chained volume indices and their variation rates.

A special problem linked to the chaining technique is the representation of balances, in particular, the changes of inventories and the balance of foreign trade (*external demand*). Given that over time these series can take positive and negative values, it is not possible to obtain true linked volume indices[30]. Only the contributions to GDP growth of each component allow a comprehensive and seamless representation of GDP from the point of view of demand, given that the variation rates and the index numbers do not make sense for some of the aggregates (also in the case of current prices).

The **contributions to the growth** (decrease) of an aggregate try to measure the impact of the evolution of each component on that of the aggregate and constitute an essential tool for the economic analysis of the data published in the National Accounts. However, based on the introduction of the chain-linked index technique for measuring the variations in economic aggregates in terms of volume and the consequent loss of additivity, the calculation of the contributions to growth (decrease) in volume of GDP it is less direct than when working with a fixed base.

The method used in the QNAS to calculate the contributions is the *Additive Volume Data Method (AVD)*[31], following the recommendations[32] of the Eurostat Quarterly Accounts Manual. This method allows obtaining fully additive contributions both in the case of quarter-on-quarter variation rates and for year-on-year variation rates.

However, the previous method is not applicable for those aggregates that can take positive and negative values, such as the change in inventories. In these cases, the contributions to growth are obtained, also in line with international recommendations, in a residual way, to guarantee their additivity[33].

### 3.3.2 Chaining and benchmarking

The temporal disaggregation and benchmarking procedures should not be applied to annual data expressed at average prices of the previous year since they do not constitute a time series in the strict sense but rather to the annual series of linked indices.

The quarterly disaggregation of the annual series of chain-linked volume indices using quarterly volume indicators leads to obtaining results equivalent to those obtained by the annual overlap procedure.

Volume measurements expressed at average prices of the previous year for series of quarterly indices chained annually are direct only in the case of the annual overlap procedure. The other chaining techniques require additional information.

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[30] Handbook on Quarterly National Accounts, Eurostat, 2013 Edition, 6.77

[31] A full description of the method can be found in the Handbook on quarterly national accounts, 2013 Edition, 6.97-6.102

[32] See Handbook on quarterly national accounts, 2013 Edition, 6.112

[33] For example, in the case of changes in inventories, the contribution can be obtained as the difference between the contributions of gross capital formation and gross fixed capital formation.

### 3.3.3 Chaining and seasonal adjustment

The seasonal adjustment of the aggregates expressed in terms of chain-linked volume is done on the basis of gross, chained and reconciled figures. An indirect approach is used, that is, the individual components of an aggregate are generally seasonally and calendar adjusted, while the aggregates are obtained by aggregation of the components.

GDP data in terms of chained volume and adjusted for seasonal and calendar effects are obtained directly.

The seasonally adjusted series of the final quarterly GDP is obtained once the direct adjustment has been made to the original quarterly GDP series and after having applied a benchmarking procedure to achieve the time restriction that the aggregation of the four quarters of each year coincides with the annual GDP data for that year. This series constitutes the transversal restriction to which the aggregation of the seasonally adjusted components of supply, use and income must conform.

## 3.4 Seasonal and calendar adjustment

### 3.4.1 Policy for seasonal adjustment

The seasonal and calendar effects adjustment is made to each of the quarterly macroeconomic aggregates, both to the series at current prices and to the series of linked volume indices.

The preparation of the seasonally and calendar adjusted results covers both the signal extraction process, which includes the treatment of seasonal adjustment and calendar effects, and the procedures that guarantee annual consistency between the raw data and the seasonally adjusted data.

The methods comply with the recommendations published in the quarterly accounts' manuals (Eurostat, 1999/2013 and IMF 2001/2016) and related to seasonal adjustment (*ESS Guidelines on Seasonal Adjustment, 2015*) and with the *INE Standard for Seasonal and Calendar Effects Adjustments in Short-term Series, 2019*[34]. In this way, the seasonal adjustment procedures are developed in accordance with a parametric approach, based on regression models with ARIMA errors, identifying and estimating a priori a model that adequately adjusts to the observed series and deriving from it appropriate models for each of the components of the series (cycle-trend, seasonal and irregular).

It should be taken into account that the ARIMA model is chosen once a year at a time when the annual series are also revised[35]. Such models remain fixed during the rest of the year. However, these are monitored in each quarter. Furthermore, the parameters of the ARIMA model are re-estimated each time a new observation is available, although the seasonally and calendar adjusted results corresponding to periods for which the unadjusted result is not subject to revision are not updated.

Although the assumption that seasonality in a broad sense (seasonal and calendar effects) is neutral over the year may at times be questionable — particularly when seasonality is changing, when calendar effects extend beyond one year, or when interventions occur — international practice in this field is to maintain annual consistency between the non-seasonally and non-calendar-adjusted data and the seasonally

[34] https://www.ine.es/clasifi/estandar_efectos_estacionales.pdf

[35] In section 18.6 of the standardized methodological report on the operation, a file with detailed metadata of the seasonal adjustment of all published series is published, which is updated once a year coinciding with the identification of models.

adjusted data. In other words, the annual aggregation of the seasonally adjusted series coincides with the annual total of the original series, both at current prices and in volume terms. To ensure this, the seasonal adjustment procedure is always followed by a benchmarking procedure, using the methodologies of *Chow and Lin (1971)*[36], *Fernández (1981)*[37] *or Denton*[38]*,* with the aim of preserving the original seasonally adjusted signal.

In addition, consistent seasonally adjusted data are presented from the accounting point of view for each quarter, guaranteeing the balance of the GDP adjusted for seasonality in its different approaches (supply, use and income).

This preference for consistency in optimality in the sense of seasonal adjustment must be understood in the context of the coherence which should exist in all national accounts systems, which is indispensable for the analysis of both short- and long-term economic developments.

### 3.4.2 Policy for calendar adjustment

The estimation of the underlying components of the time series is carried out in two stages:

In a first stage, calendar effects as well as other deterministic effects are identified and modelled using a regression model with ARIMA errors.

In a second stage, an estimate of the unobservable components is obtained.

The following calendar effects are considered:

- The different number of working days in each month.
- The different composition of the number of working days.
- The leap-year effect
- Moving holidays, in our case, the effect of the Easter holiday.

The presence of calendar effects is contrasted in each series, so that the adjustment is made when there is statistical evidence and an economic explanation for the presence of such effects. This analysis is complemented by a non-parametric spectral analysis as an additional diagnostic method.

### 3.4.3 Revision policy for seasonally adjusted data

As indicated in the previous sections, the seasonal adjustment is made directly to the gross series and not through the indicators **used to estimate them. In addition, the adjustment is made individually, series by series.**

The model selection is carried out once a year, at the time when the annual series are also revised. These models retain their ARIMA structure and their calendar regressors

[36] Chow, G.C. y A. Lin (1971) "Best Linear Unbiased Interpolation, Distribution, and Extrapolation of Time Series by Related Series", The Review of Economics and Statistics, vol. 53, n. 4, p. 372-375.
[37] Fernández, R.B. (1981) "A Methodological Note on the Estimation of Time Series", The Review of Economics and Statistics, vol. 63, n. 3, p. 471-476.
[38] Denton, F.T. (1971), "Adjustment of Monthly or Quarterly Series to Annual Totals: An Approach Based on Quadratic Minimization," *Journal of the American Statistical Association*, vol. 66, no. 333, pp. 99–102. The extension of Denton's method to the multivariate case is described in Di Fonzo, T. (1994), "Temporal Disaggregation of a System of Time Series When the Aggregate is Known," *INSEE–Eurostat Workshop on Quarterly National Accounts*, Paris, December, and in Di Fonzo, T. and Marini, M. (2003), "Benchmarking Systems of Seasonally Adjusted Time Series According to Denton's Movement Preservation Principle."

for the remaining quarters of the year. However, they are monitored every quarter, and the modelling of any outliers that may arise during the open year may be incorporated, in line with international recommendations in this field. The parameters are re-estimated each time a new observation becomes available.

## 4. GDP and its components: the supply approach

### 4.1 Gross value added, including breakdown by branch

An estimate of the Gross Value Added is offered for the following branches of activity, in accordance with the National Classification of Economic Activities of 2009 (NACE REV. 2):

- Agriculture, forestry and fishing (Section A, NACE REV. 2)
- Manufacturing, mining and quarrying and other industry (Sections B-C-D-E, NACE REV. 2)
    - Of which: manufactured products (Section C, NACE REV. 2)
- Construction (Section F, NACE REV. 2)
- Services (Sections G to T, NACE REV. 2)
    - Services. Wholesale and retail trade services; Transportation and storage; Accommodation and food services (Sections G-H-I, NACE REV. 2)
    - Services. Information and communication (Section J, NACE REV. 2)
    - Services. Financial and insurance activities (Section K, NACE REV. 2)
    - Services. Real estate activities (Section L, NACE REV. 2)
    - Services. Professional, scientific and technical services; Administrative and support services (Sections M-N, NACE REV. 2)
    - Services. Public administration and defence services, compulsory social security services; Education services; Human health and social work services (Sections O-P-Q, NACE REV. 2)
    - Services. Arts, entertainment and recreation services; Other services; Private households as employers (Sections R-T, NACE REV. 2)

Synthetic indicators of value, volume and prices are constructed for each of the branches (normally one of them is implicit). Given the absence of reliable quarterly indicators of value or volume of intermediate consumption, gross value added indicators are production indicators such as indicators of turnover, production indices, sales, etc.

On the other hand, in the construction of the synthetic indicators, the latest information available from the source and destination tables is used in most cases to determine the weightings of each of the components of the synthetic indicator.

The following sections present detailed information on the source data used in the construction of the synthetic indicators.

### 4.1.1 Agriculture, forestry and fishing (section A, NACE REV. 2).

Synthetic price and volume indicators are constructed from the sources listed in the following tables. Synthetic indicators of value are derived implicitly[39].

To this end, four components are identified within this branch — agriculture, livestock, fishing and forestry — which are subsequently aggregated into a synthetic indicator for the activity branch as a whole.

For agriculture, the volume indicator for crop production is constructed from a basket of crops selected on the basis of their representativeness. This basket covers at least 90% of total production expressed in monetary terms. As quantities, the annual crop production figures published in the Monthly Reports on Crop Areas and Production (MAPA) are used, with the annual production distributed across quarters according to the agricultural year.

For prices in the calculation of the volume indicator, the annual series of Prices Received by Farmers (MAPA) are used for each crop included in the basket.

Regarding livestock, the volume indicator is constructed in a similar manner to that of crop production. As quantities, total carcass weights by livestock class and the volume of milk collected are used.

For prices, the annual series of prices received by farmers for the subclasses of meat livestock and milk are used. Valuation coefficients (i.e. weights) are applied to convert the subclasses of meat livestock into livestock classes, which is the level for which quantity data are available.

For the synthetic price indicator for crop production, the series used is the Agricultural producer price indices. Ordinary monthly index of producer prices for agricultural products (MAPA).

For the synthetic price indicator for livestock, the series used is the Agricultural producer price indices. Ordinary monthly index of producer prices for animal products (MAPA).

In the case of forestry and fishing, synthetic indicators of both volume and prices are constructed based on the information shown in the following table for these activities.

For some recent periods in which the underlying source data are not yet available, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The choice of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the competing forecasts by combining these prediction errors[40]. In addition, for the flash estimates, partial early results of IPRI have been available for some quarters.

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[39] Regarding availability (t+30 / t+90) in the advance of results for the quarter t (t+30 days) or in the update of the same (t+90), “m” refers to the last month of the reference quarter and “t” refers to the reference quarter.

[40] ETS: Exponential smoothing state space model
TBATS: Exponential smoothing state space model with Box-Cox transformation, ARMA errors, Trend and Seasonal components
NNETAR: Neural Network Time Series Forecasts. Feed-forward neural networks with a single hidden layer and lagged inputs for forecasting univariate time series.
THETAM: Theta method forecast (The theta method of Assimakopoulos and Nikolopoulos (2000) is equivalent to simple exponential smoothing with drift).
STLM: Linear model including trend and seasonality components

### 4.1.2 Manufacturing, mining and quarrying and other industry (sections B, C, D and E, NACE REV. 2)

In the case of *Mining and quarrying; Electricity, gas, steam and air conditioning supply; Water supply; sewerage; waste management and remediation activities* (sections B, D and E of NACE REV. 2), synthetic price and volume indicators are constructed from the sources listed in the following tables. Synthetic indicators of value are derived implicitly.

**Aggregate:** **GVA of Mining and quarrying; Electricity, gas, steam and air conditioning supply; Water supply, sewerage, waste management and remediation activities**

| Base indicator | Source | Type of indicator | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Industrial Turnover Index (ITI) for Mining and Quarrying (section B of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Mining and Quarrying | AEAT | Value | Quarterly | q-1 / q |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Water supply, waste management and remediation | AEAT | Value | Quarterly | q-1 / q |
| Industrial Production Index (IPI) for Mining and Quarrying (section B of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial Production Index (IPI) for Electricity, Gas, Steam and Air Conditioning Supply (section D of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial Production Index (IPI) for Water Supply, Sewerage, Waste Management and Remediation Activities (section E of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Deflated total sales from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Mining and Quarrying | AEAT | Volume | Quarterly | q-1 / q |
| Deflated total sales from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Water supply, waste management and remediation | AEAT | Volume | Quarterly | q-1 / q |
| Electricity generation (renewable and non-renewable) | REE | Volume | Monthly | m / m+2 |
| Industrial Price Index (IPRI) for Mining and Quarrying (section B of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial Price Index (IPRI) for Electricity, Gas, Steam and Air Conditioning Supply (section D of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial Price Index (IPRI) for Water Supply, Sewerage, Waste Management and Remediation Activities (section E of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Average arithmetic price of the daily market matching in the Spanish electricity system | OMIE | Price | Monthly | m / m+2 |

Notes:
AEAT: State Tax Administration Agency
OMIE: Iberian Electricity Market Operator
REE: Spanish Electricity Network (Red Eléctrica de España)

In the case of *Manufacture of coke and refined petroleum products* (division 19, NACE REV. 2), synthetic price and volume indicators are constructed from the information sources listed in the following tables. Synthetic indicators of value are derived implicitly.

**Aggregate:** **GVA of Manufacture of coke and refined petroleum products**

| Base indicator | Source | Type of indicator | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Industrial Turnover Index (ITI) for Manufacture of Coke and Refined Petroleum Products (division 19 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Manufacture of Coke and Refined Petroleum Products | AEAT | Value | Quarterly | q-1 / q |
| Industrial Production Index (IPI) for Manufacture of Coke and Refined Petroleum Products (division 19 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Deflated total sales from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Manufacture of Coke and Refined Petroleum Products | AEAT | Volume | Quarterly | q-1 / q |
| Production of petroleum products (excluding own consumption) in refineries | CORES | Volume | Monthly | m-1 / m |
| Industrial Price Index (IPRI) for Manufacture of Coke and Refined Petroleum Products (division 19 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |

Notes:
AEAT: State Tax Administration Agency
CORES: Corporation for Strategic Reserves of Petroleum Products

Finally, in the case of *Manufacturing industry (excluding manufacture of coke and refined petroleum products)* (section C, NACE REV. 2, except for division 19) synthetic price and volume indicators are constructed using the sources listed in the following table. The synthetic value indicators are derived implicitly.

**Aggregate:** **GVA of Manufacturing (excluding Manufacture of coke and refined petroleum products)**

| Base indicator | Source | Type of indicator | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Industrial Turnover Index (ITI) for Manufacture of food products (division 10 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of beverages (division 11 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of tobacco products (division 12 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of textiles (division 13 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of wearing apparel (division 14 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of leather and related products (division 15 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of wood and of products of wood and cork, except furniture; manu facture of articles of straw and plaiting materials (division 16 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of paper and paper products (division 17 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Printing and reproduction of recorded media (division 18 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of chemicals and chemical products (division 20 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of basic pharmaceutical products and pharmaceutical preparations (division 21 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of rubber and plastic products (division 22 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of other non-metallic mineral products (division 23 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of basic metals (division 24 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of fabricated metal products, except machinery and equipment (division 25 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of computer, electronic and optical products (division 26 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of electrical equipment (division 27 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of machineryand equipment n.e.c. (division 28 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of motor vehicles, trailers and semi-trailers (division 29 of the CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of other transport equipment (division 30 of the CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Manufacture of furniture (division 31 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Other manufacturing (division 32 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Industrial Turnover Index (ITI) for Repair and installation of machinery and equipment (division 33 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Primary Metal Transformation and Manufacture of Non-Metallic Mineral Products | AEAT | Value | Quarterly | q-1 / q |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Manufacture of Machinery and Equipment, Installation, and Repair | AEAT | Value | Quarterly | q-1 / q |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for the Manufacture of transport equipment | AEAT | Value | Quarterly | q-1 / q |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for the Chemical and pharmaceutical industry | AEAT | Value | Quarterly | q-1 / q |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for food, beverage, and tobacco manufacturing | AEAT | Value | Quarterly | q-1 / q |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for the textile, clothing, and footwear industry | AEAT | Value | Quarterly | q-1 / q |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Paper, Publishing and Graphic Arts | AEAT | Value | Quarterly | q-1 / q |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for wood, cork, and furniture | AEAT | Value | Quarterly | q-1 / q |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Other manufacturing | AEAT | Value | Quarterly | q-1 / q |

| Base indicator | Source | Type of indicator | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Industrial production index (IPI) for Manufacture of food products (division 10 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of beverages (division 11 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of tobacco products (division 12 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of textiles (division 13 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of wearing apparel (division 14 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of leather and related products (division 15 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of wood and of products of wood and cork, except furniture; manu facture of articles of straw and plaiting materials (division 16 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of paper and paper products (division 17 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Printing and reproduction of recorded media (division 18 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of chemicals and chemical products (division 20 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of basic pharmaceutical products and pharmaceutical preparations (division 21 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of rubber and plastic products (division 22 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of other non-metallic mineral products (division 23 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of basic metals (division 24 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of fabricated metal products, except machinery and equipment (division 25 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of computer, electronic and optical products (division 26 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of electrical equipment (division 27 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of machineryand equipment n.e.c. (division 28 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of motor vehicles, trailers and semi-trailers (division 29 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of other transport equipment (division 30 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Manufacture of furniture (division 31 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Other manufacturing (division 32 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Industrial production index (IPI) for Repair and installation of machinery and equipment (division 33 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Deflated total sales from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for primary metal processing and manufacture of non-metallic mineral products | AEAT | Volume | Quarterly | q-1 / q |
| Deflated total sales from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for manufacture of machinery and equipment, installation, and repair | AEAT | Volume | Quarterly | q-1 / q |
| Deflated total sales from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for manufacture of transport equipment | AEAT | Volume | Quarterly | q-1 / q |
| Deflated total sales from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for chemical and pharmaceutical industry | AEAT | Volume | Quarterly | q-1 / q |
| Deflated total sales from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for manufacture of food, beverages, and tobacco | AEAT | Volume | Quarterly | q-1 / q |
| Deflated total sales from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for textile, clothing and footwear industry | AEAT | Volume | Quarterly | q-1 / q |
| Deflated total sales from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for paper, publishing and graphic arts industry | AEAT | Volume | Quarterly | q-1 / q |
| Deflated total sales from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for wood, cork, and furniture | AEAT | Volume | Quarterly | q-1 / q |
| Deflated total sales from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Other manufacturing | AEAT | Volume | Quarterly | q-1 / q |

| Base indicator | Source | Type of indicator | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Industrial price index (IPRI) for Manufacture of food products (division 10 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of beverages (division 11 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of tobacco products (division 12 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of textiles (division 13 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of wearing apparel (division 14 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of leather and related products (division 15 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of wood and of products of wood and cork, except furniture; manu facture of articles of straw and plaiting materials (division 16 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of paper and paper products (division 17 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Printing and reproduction of recorded media (division 18 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of chemicals and chemical products (division 20 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of basic pharmaceutical products and pharmaceutical preparations (division 21 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of rubber and plastic products (division 22 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of other non-metallic mineral products (division 23 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of basic metals (division 24 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of fabricated metal products, except machinery and equipment (division 25 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of computer, electronic and optical products (division 26 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of electrical equipment (division 27 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of machineryand equipment n.e.c. (division 28 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of motor vehicles, trailers and semi-trailers (division 29 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of other transport equipment (division 30 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Manufacture of furniture (division 31 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Other manufacturing (division 32 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial price index (IPRI) for Repair and installation of machinery and equipment (division 33 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |

Note:
AEAT: State Tax Administration Agency

In all cases, for some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. In addition, for the flash estimates, partial early results for IPI and IPRI have been available in some quarters.

### 4.1.3 Construction (section F, NACE REV. 2).

Synthetic price and value indicators are constructed from the information sources listed in the following tables. Synthetic volume indicators are derived implicitly.

**Aggregate:** **GVA of Construction**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Construction | AEAT | Value | Quarterly | q-1 / q |
| Construction Industry Production Indices. Production: works carried out by companies (including real estate development) | MTMS | Value | Monthly | m-1 / m |
| Industrial Production Index (IPI) for manufacture of ceramic products for construction (group 23.3 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Apparent consumption of cement | MINTUR | Volume | Monthly | m / m+1 |
| Industrial Producer Price Index (IPRI) for manufacture of ceramic products for construction (group 23.3 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Industrial Producer Price Index (IPRI) for manufacture of cement (class 23.5.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Construction Cost Index (CCI). Total construction | MTMS | Price | Monthly | m-2 / m |

Notes:
AEAT: State Tax Administration Agency
MINTUR: Ministry of Industry and Tourism
MTMS: Ministry of Transport and Sustainable Mobility

In all cases, for some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. In addition, for the flash estimates, partial early results for IPI and IPRI have been available in some quarters

### 4.1.4 Wholesale and retail trade services; Transportation and storage; Accommodation and food services (sections G, H and I, NACE REV. 2)

In the case of *Wholesale and retail trade; Repair of motor vehicles and motorcycles* (section G, NACE REV. 2), synthetic price and value indicators are constructed from the information sources listed in the following tables. Synthetic volume indicators are derived implicitly.

**Aggregate:** **GVA of Wholesale and retail trade; Repair of motor vehicles and motorcycles**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Retail Trade Index (RTI) of retail trade, except motor vehicles and motorcycles (division 47 of CNAE 2009). Turnover at current prices | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for sale and repair of motor vehicles and motorcycles (division 45 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for trade intermediaries (group 46.1 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for wholesale trade in agricultural raw materials and live animals (group 46.2 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for wholesale trade in food, beverages and tobacco (group 46.3 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for wholesale trade in household goods (group 46.4 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for wholesale trade in information and communication technology equipment (group 46.5 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for wholesale trade in other machinery, equipment and supplies (group 46.6 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for other specialised wholesale trade (group 46.7 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for non-specialised wholesale trade (group 46.9 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Wholesale Trade and Repair of Motor Vehicles | AEAT | Value | Quarterly | q-1 / q |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Retail Trade | AEAT | Value | Quarterly | q-1 / q |
| Registrations of passenger cars | Own compilation | Value | Quarterly | q-1 / q |
| Registrations of motorcycles | Own compilation | Value | Quarterly | q-1 / q |
| Registrations of trucks | Own compilation | Value | Quarterly | q-1 / q |
| Registrations of buses | Own compilation | Value | Quarterly | q-1 / q |
| Index of Services Production (ISP) for sale and repair of motor vehicles and motorcycles (division 45 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for trade intermediaries (group 46.1 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for wholesale trade in agricultural raw materials and live animals (group 46.2 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for wholesale trade in food, beverages and tobacco (group 46.3 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for wholesale trade in household goods (group 46.4 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for wholesale trade in information and communication technology equipment (group 46.5 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for wholesale trade in other machinery, equipment and supplies (group 46.6 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for other specialised wholesale trade (group 46.7 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for non-specialised wholesale trade (group 46.9 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| General CPI | INE | Price | Monthly | m / m+2 |
| CPI for vehicle acquisition (subgroup 07.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |

Note:
AEAT: State Tax Administration Agency

The estimation relies on the processing of the microdata on vehicle registrations provided by the Directorate-General for Traffic (DGT), carried out jointly by the Subdirectorate-General of Annual Accounts and the Subdirectorate-General of Quarterly Accounts. The processing of these microdata makes it possible to obtain the indicators of passenger car registrations, motorcycle registrations, truck registrations and bus registrations shown in the table.

For the estimation, average prices are calculated by type of vehicle and extrapolated for those periods in which no structural information is available. In addition, each record is assigned an economic destination to ensure the proper measurement of the macroeconomic aggregates. It should be noted that these classifications may differ from those used in other statistical sources, as they are adapted to the standards of the national accounts systems and to the definitions and concepts applied therein.

Using the real-time processing of DGT microdata and the extrapolation of prices by type of vehicle, the corresponding quarterly estimates are compiled.

In the case of *Transportation and storage* (section H, NACE REV. 2), synthetic price and value indicators are also constructed from the information sources listed in the following tables. Synthetic volume indicators are derived implicitly.

**Aggregate:** **GVA of Transportation and storage**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Services Sector Activity Indicators (SSAI) for rail transport (aggregation of groups 49.1 and 49.2 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for other land passenger transport (classes 49.3.1 and 49.3.9 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for taxi transport (class 49.3.2 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for road freight and moving services (group 49.4 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for maritime and inland waterways transport (division 50 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for air transport (division 51 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for storage and support activities for transportation (division 52 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for postal and courier activities (division 53 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for transportation and storage | AEAT | Value | Quarterly | q-1 / q |
| Rail transport. Renfe Operadora. Passenger-kilometres | MTMS | Volume | Monthly | m-1 / m+1 |
| Rail transport. Renfe Operadora. Freight tonne-kilometres | MTMS | Volume | Monthly | m-1 / m+1 |
| Rail transport statistics. Passengers transported. Passenger-km | INE | Volume | Quarterly | q-1 / q |
| Rail transport statistics. Freight transported. Tonne-km | INE | Volume | Quarterly | q-1 / q |
| Passenger transport statistics (PT). Urban by metro | INE | Volume | Monthly | m-1 / m+1 |
| Passenger transport statistics (PT). Regular urban bus transport | INE | Volume | Monthly | m-1 / m+1 |
| Passenger transport statistics (PT). Regular interurban bus transport | INE | Volume | Monthly | m-1 / m+1 |
| Passenger transport statistics (PT). Special and discretionary transport | INE | Volume | Monthly | m-1 / m+1 |
| Road freight transport. Tonne-kilometres | MTMS | Volume | Quarterly | q-1 / q |
| Passenger transport. Maritime | State's Ports | Volume | Monthly | m-1 / m+1 |
| Freight transport. Maritime | State's Ports | Volume | Monthly | m-1 / m+1 |
| Passenger transport. Air. Commercial. Total | AENA | Volume | Monthly | m / m+2 |
| Freight transport. Air. Aircraft traffic. Total | AENA | Volume | Monthly | m / m+2 |
| Index of Services Production (ISP) for maritime and inland waterways transport (division 50 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for air transport (division 51 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for storage and support activities for transportation (division 52 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for postal and courier activities (division 53 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| CPI for passenger rail transport (class 07.3.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for passenger road transport (class 07.3.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for passenger air transport (class 07.3.3 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for passenger maritime and inland waterways transport (class 07.3.4 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| Services Producer Price Index (SPPI) for maritime freight transport (group 50.2 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for passenger air transport (group 51.1 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Road freight transport. Average price index per kilometre. Public service cargo operations. Inter-municipal transport | MTMS | Price | Quarterly | q-1 / q |

Notes:

AEAT: State Tax Administration Agency
AENA: Spanish Airports and Air Navigation
MTMS: Ministry of Transport and Sustainable Mobility

Finally, in the case of the *Accommodation and food service activities* (section I, NACE REV. 2), synthetic price and value indicators are also prepared from the information sources listed in the following tables. Synthetic volume indicators are derived implicitly.

**Aggregate:** **GVA of Accommodation and food service activities**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Services Sector Activity Indicators (SSAI) for accommodation services (division 55 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for food and beverage service activities (division 56 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for accommodation and food service activities | AEAT | Value | Quarterly | q-1 / q |
| Index of Services Production (ISP) for accommodation services (division 55 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for food and beverage service activities (division 56 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Rural Tourism Accommodation Occupancy Survey. Overnight stays | INE | Volume | Monthly | m-1 / m+1 |
| Holiday Dwelling Occupancy Survey. Overnight stays | INE | Volume | Monthly | m-1 / m+1 |
| Holiday Campsite Occupancy Survey. Overnight stays | INE | Volume | Monthly | m-1 / m+1 |
| Hotel Occupancy Survey (HOS). Overnight stays in hotel establishments | INE | Volume | Monthly | m-1 / m+1 |
| Rural Tourism Accommodation Price Index (RTAPI) | INE | Price | Monthly | m-1 / m+1 |
| Holiday Dwellings Price Index (HDPI) | INE | Price | Monthly | m-1 / m+1 |
| Tourist Campsite Price Index (TCPI) | INE | Price | Monthly | m-1 / m+1 |
| CPI for accommodation services (subgroup 11.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |

Note:
AEAT: State Tax Administration Agency

In all cases, for some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. In addition, for the flash estimates, partial early results for SSAI, ISP, HOS and RTI have been available in some quarters.

### 4.1.5 Information and communication (section J, NACE REV. 2)

Synthetic price and value indicators are prepared from the information sources listed in the following tables. Synthetic volume indicators are derived implicitly.

**Aggregate:** **GVA of Information and communication**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Services Sector Activity Indicators (SSAI) for publishing activities (division 58 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for motion picture, video and television programme production, sound recording and music publishing (division 59 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for programming and broadcasting activities (division 60 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for telecommunications (division 61 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for computer programming, consultancy and related activities (division 62 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for information service activities (division 63 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for information and communication | AEAT | Value | Quarterly | q-1 / q |
| Telecommunications sector revenues | CNMC | Value | Quarterly | q-1 / q |
| Index of Services Production (ISP) for publishing activities (division 58 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for motion picture, video and television programme production, sound recording and music publishing (division 59 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for programming and broadcasting activities (division 60 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for telecommunications (division 61 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for computer programming, consultancy and related activities (division 62 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for information service activities (division 63 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| CPI for cultural services (class 09.4.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for newspapers, books and stationery (subgroup 09.5 of ECOICOP) | INE | Price | Monthly | m / m+2 |

Notes:
AEAT: State Tax Administration Agency
CNMC: National Commission on Markets and Competition

In all cases, for some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. In addition, for the flash estimates, partial early results for SSAI and ISP have been available in some quarters.

### 4.1.6 Financial and insurance activities (section K, NACE REV. 2)

The GVA at current prices of these activities incorporates the results of the *Quarterly Non-Financial Accounts of the Institutional Sectors* (QNFIS) for each of the subsectors within the *Financial Institutions* sector.

To determine its evolution in volume terms, different procedures are applied depending on whether the aim is to deflate the output and intermediate consumption of financial and insurance activities excluding FISIM, or the output and intermediate consumption derived from FISIM.

To calculate the volume evolution of the output and intermediate consumption of the various sub-branches (K51, K52 and K53) included in Section K in NACE REV. 2, a price index is first constructed using the indicators listed below. This index is then used to deflate the current-prices output and intermediate consumption of these sub-branches, based on the Service Producer Price Indices (SPPI), Consumer Price Indices at Constant Tax Rates (CPI-CT), Construction Cost Indices (CCI), Industrial Price Indices (IPRI) and the Consumer Price Index (CPI) for the corresponding category.

The volume evolution of FISIM is obtained from an approximation to the deflator derived from the estimated stock of loans and deposits for the year, to which the difference between the reference rate and the effective rate corresponding to the previous year is applied, together with the demand deflator.

For some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors.

### 4.1.7 Real estate activities (section L, NACE REV. 2)

In the case of housing rental services (real or imputed owner-occupied housing), synthetic price and volume indicators are constructed from the information sources listed in the following tables. Synthetic indicators of value are derived implicitly.

**Aggregate:** **GVA of Real estate activities (production of housing rental services)**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Residents Travel Survey. Total expenditure on rented dwellings in Spain | INE | Value | Quarterly | q-1 / q |
| Residents Travel Survey. Total expenditure on owner-occupied dwellings in Spain | INE | Value | Quarterly | q-1 / q |
| Building permits from Colleges of Technical Architects (Building works): End-of-construction certificates. Number of dwellings by type of promoter | MTMS | Volume | Monthly | m-2 / m |
| CPI for dwelling rentals (subgroup 04.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| Residents Travel Survey. Average daily expenditure per person on rented dwellings in Spain | INE | Price | Quarterly | q-1 / q |
| Residents Travel Survey. Average daily expenditure per person on owner-occupied dwellings in Spain | INE | Price | Quarterly | q-1 / q |

Note:
MTMS: Ministry of Transport and Sustainable Mobility

In the rest of real estate activities, synthetic price and value indicators are constructed from the information sources listed in the following tables. Synthetic volume indicators are derived implicitly.

**Aggregate:** **GVA of Real estate activities (excluding production of housing rental services)**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Services Sector Activity Indicators (SSAI) for real estate activities (division 68 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for real estate activities | AEAT | Value | Quarterly | q-1 / q |
| Index of Services Production (ISP) for real estate activities (division 68 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Statistics on Transfer of Property Rights (STPR). Housing sales by system and status. Total dwellings | INE | Volume | Monthly | m-2 / m |
| Transfer contracts of all types of assets and rights. Purchase of real estate. Urban properties – Dwellings | DGSJyFP | Volume | Monthly | m-6 / m-3 |
| Real estate appraisals. Number of appraisals used for the calculation of the average dwelling value | MTMS | Volume | Quarterly | q-1 / q |
| Average appraised value of free dwelling | MTMS | Price | Quarterly | q-1 / q |

Notes:
AEAT: State Tax Administration Agency
DGSJyFP: Directorate-General for Legal Security and Public Faith of the Ministry of the Presidency, Justice and Relations with the Parliament
MTMS: Ministry of Transport and Sustainable Mobility

In all cases, for some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. In addition, for the flash estimates, partial early results for SSAI, ISP and STPR have been available in some quarters.

### 4.1.8 Professional, scientific and technical services; Administrative and support services (section M and N, NACE REV. 2)

Synthetic price and value indicators are constructed from the information sources listed in the following tables. Synthetic volume indicators are derived implicitly.

**Aggregate:** **GVA of Professional, scientific and technical activities; Administrative and support service activities**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Services Sector Activity Indicators (SSAI) for legal and accounting activities (division 69 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for management consultancy activities (group 70.2 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for architectural and engineering services; technical testing and analysis (division 71 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for advertising and market research (division 73 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for other professional, scientific and technical activities (division 74 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for rental and leasing activities (division 77 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for employment activities (division 78 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for travel agency, tour operator, reservation services and related activities (division 79 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for security and investigation activities (division 80 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for services to buildings and landscape activities (division 81 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for office administrative, office support and other business support activities (division 82 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for other production services | AEAT | Value | Quarterly | q-1 / q |
| Residents Travel Survey. Number of leisure, recreation and holiday trips | INE | Volume | Monthly | m-3 / m-1 |
| Index of Services Production (ISP) for legal and accounting activities (division 69 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for management consultancy activities (group 70.2 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for architectural and engineering services; technical testing and analysis (division 71 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for advertising and market research (division 73 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for other professional, scientific and technical activities (division 74 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for rental and leasing activities (division 77 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for employment activities (division 78 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for travel agency, tour operator, reservation services and related activities (division 79 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for security and investigation activities (division 80 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for services to buildings and landscape activities (division 81 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| Index of Services Production (ISP) for office administrative, office support and other business support activities (division 82 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| CPI for package holidays (subgroup 09.6 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for services excluding housing rentals (special group) | INE | Price | Monthly | m / m+2 |

Notes:
AEAT: State Tax Administration Agency

In all cases, for some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. In addition, for the flash estimates, partial early results for SSAI and ISP have been available in some quarters.

#### 4.1.9 Public administration and defence services, compulsory social security services; Education services; Human health and social work services (sections O, P and Q, NACE REV. 2)

Both the synthetic indicator of value and volume result from a weighted average of an indicator of the evolution of the GVA of the non-market units of the branch (of the General Governments and Non-Profit Institutions Serving Households institutional sectors) and of an indicator of the evolution of the GVA of its market units.

The indicator of the evolution of the GVA of General Government units corresponds to the GVA indicator of the *General Government* sector as a whole, which results from the integration of the *Quarterly Non-Financial Accounts of General Government*. The indicator of its evolution in volume terms is obtained by deflating the current-price GVA by components (compensation of employees using the estimated compensation per job for the period, and consumption of fixed capital according to its volume measurement derived from the Perpetual Inventory Method, which provides the estimates of the aggregate at current prices and at previous year's prices, followed by their quarterly breakdown).

The indicator of the evolution of the GVA of *Non-Profit Institutions Serving Households* in the branch is obtained from their quarterly components: market output, intermediate consumption, compensation of employees, consumption of fixed capital and other net taxes on production.

The evolution of these components is estimated quarterly on the basis of the available information from a sample of such units for which quarterly accounting data exist, the evolution of the corresponding components in the non-market units of General Government, and a weighted average of the evolution of these components in the most recent periods.

The indicator of their evolution in volume terms is obtained by deflating the current-price components (compensation of employees using the estimated compensation per job for the period, and consumption of fixed capital according to its volume measurement derived from the Perpetual Inventory Method, which provides the estimate of the aggregate at current prices and at previous year's prices, followed by its quarterly breakdown).

The indicator of the evolution in volume terms of market units is constructed from the evolution of employment in the education and health and social work branches, according to the Labour Force Survey (LFS). Their evolution in value is determined by applying the consumer price index for *education* (division 10 of ECOICOP) and a combination of the consumer price indices for *outpatient services* (subgroup 06.2 of ECOICOP) and *hospital services* (subgroup 06.3 of ECOICOP). The synthetic price indicator is obtained implicitly.

### 4.1.10 Arts, entertainment and recreation services; Other services; Private households as employers (sections R, S and T, NACE REV. 2)

In the case of *Arts, entertainment and recreation; Other service activities* (sections R and S, NACE REV. 2) synthetic price and value indicators are constructed from the information sources listed in the following tables. Synthetic volume indicators are derived implicitly.

**Aggregate:** **GVA of Arts, entertainment and recreation; Other service activities**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Services Sector Activity Indicators (SSAI) for food and beverage service activities (division 56 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Total sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for cultural and recreational services | AEAT | Value | Quarterly | q-1 / q |
| Domestic sales at current prices from Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for other services | AEAT | Value | Quarterly | q-1 / q |
| Total exports at current prices from Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for social, cultural, recreational and other services | AEAT | Value | Quarterly | q-1 / q |
| Box office revenues in cinemas | Ministry of Culture | Value | Monthly | m-2 / m |
| Amounts wagered in online gambling | MDSCA2030 | Value | Monthly | m-3 / m-3 |
| Sales of active games | SELAE | Value | Quarterly | q / q |
| Sales of lotteries and games of chance | ONCE | Value | Quarterly | q / q |
| Index of Services Production (ISP) for food and beverage service activities (division 56 of CNAE 2009) | INE | Volume | Monthly | m-1 / m+1 |
| People employed in activities of membership organisations (division 94 of CNAE 2009) | Own compilation | Volume | Quarterly | q / q |
| People employed in repair of computers, personal and household goods (division 95 of CNAE 2009) | Own compilation | Volume | Quarterly | q / q |
| People employed in other personal service activities (division 96 of CNAE 2009) | Own compilation | Volume | Quarterly | q / q |
| CPI for repair of household appliances (class 05.3.3 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for paramedical services (class 06.2.3 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for recreational and sporting services (class 09.4.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for cultural services (class 09.4.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for gambling (class 09.4.3 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for hairdressing and beauty establishments (class 12.1.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for other fees and services (subclass 12.7.0.4 of ECOICOP) | INE | Price | Monthly | m / m+2 |

Notes:
AEAT: State Tax Administration Agency
MDSCA2030: Ministry of Social Rights, Consumer Affairs and 2030 Agenda
ONCE: Spanish National Organisation of the Blind
SELAE: State Lotteries and Betting Agency

In all cases, for some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. In addition, for the flash estimates, partial early results for SSAI and ISP have been available in some quarters.

In the case of *household activities as employers of domestic staff; Activities of households as producers of goods and services for their own use* (section T, NACE REV. 2), the evolution of their GVA in volume corresponds to the evolution of their employment (in terms of equivalent jobs full time). In estimating the evolution of its price, the CPI for domestic service is used as an indicator (subclass 05.6.2 of the ECOICOP).

### 4.2 FISIM

The production of *financial intermediation services* (section K, NACE REV. 2) and *imports of services* include Financial Intermediation Services Indirectly Measured (FISIM), determining the total supply of such services in the national economy as a whole.

On the other hand, the demand for such services is recorded as *final consumption expenditure of households on services, final consumption expenditure of the General Government, final consumption expenditure of NPISHs, intermediate consumption* of different productive activities and *exports of services*.

The quarterly analysis of the annual estimates of the aforementioned aggregates and their extrapolation in recent quarters is carried out based on the indicators described in previous sections, implicitly including the corresponding FISIM in their results, although it is not carried out carry out an explicit quarterly measurement of their supply-demand balance.

### 4.3 Taxes less subsidies on products

The QNAS integrates the value at current prices of *taxes on products and subsidies on products* registered in the *General Government Quarterly Accounts*, prepared by the IGAE.

On the date of publication of the preliminary results, the quarterly results for the entire *General Government institutional sector* (S.13) are not yet available, although the monthly accounts of the State are available (part of the *institutional subsector S. 1311 Central Government, excluding Social Security funds*) for the three months of the reference quarter and for the first two months of *Central Government, excluding social security funds* (S.1311), *Regional Government, excluding funds from social security* (S.1312) and *Social Security Funds* (S.1314), in addition to information on monthly tax collection from the Tax Agency (AEAT). With all the information available, an estimate is made of *taxes on products* and *subsidies on products* for the quarter as a whole from an econometric modelling of its components.

To the previous estimates of *taxes on imports, excluding VAT* (D.212) and *other taxes on products, excluding VAT and taxes on imports* (D.214) are added the value of the taxes payable to the institutions of the European Union accrued in each month m, derived from the information on payments in these concepts published by the Public Treasury[41] for month m+2.

In addition, the estimates of subsidies on products (D.31) include the value of the subsidies received from the EU under the European Agricultural Guarantee Fund (EAGF), obtained from the information published by the Spanish Agricultural Guarantee Fund (FEGA)[42].To estimate the volume of value added taxes (VAT) (D.211) a synthetic indicator is used that collects the weighted changes in the volume of final consumption expenditure of domestic households, gross capital formation in housing, purchases by General Government (intermediate consumption and social transfers in kind: production

[41] https://www.tesoro.es/pagos-del-tesoro/flujos-financieros-con-la-union-europea

[42] Subsidies on products include compensatory payments for arable crops, production incentives, premiums for livestock, sheep and goats, export refunds, and all subsidies in which agricultural producers receive the difference between average market prices and guaranteed prices. The remaining EAGF flows that are not classified as capital transfers (such as incentives for land set-aside, incentives for agricultural production in less-favoured and/or mountainous areas, etc.), as well as other remaining flows, are recorded as other subsidies on production.

acquired in the market) and the activity of other branches that are mostly exempt (from passing VAT on their sales).

It is important to note that when we talk about exempt branches, we are not referring to those operations that enjoy full exemption, that is, operations that will not have any impact on their input VAT deduction regime (mainly, intra-Community supplies of goods and their assimilated operations and exports of goods and their assimilated operations), but of or exempt operations that do affect the right to deduct VAT borne by the company that performs them (normally known as limited exemptions[43]).

Regarding changes in the volume of net taxes on imports, excluding VAT, the change in volume is determined by the change in the volume of the tax bases, that is, imports of goods.

Finally, to estimate the volume changes in *other net taxes on products, excluding VAT and taxes on imports*, a synthetic indicator is used that captures the volume changes of the taxed basic products. This indicator is constructed using the following sources, duly processed to ensure their consistency with National Accounts standards and, in particular, with the accrual principle.

[43] These are mainly the transactions listed in Article 20 of the VAT Law, which include financial transactions, insurance activities, educational and health services, residential lettings, etc. These transactions are exempt from the tax (no VAT is charged on them), but they also require limiting the right to deduct input VAT in proportion to the share of these exempt activities.

## 5. GDP and its components: the demand approach

### 5.1 Household final consumption expenditure

#### 5.1.1 Household final consumption expenditure on food, beverages, tobacco and narcotics

Synthetic price and value indicators are constructed from the information sources listed in the following tables. Synthetic volume indicators are derived implicitly.

**Aggregate:** **Household final consumption expenditure on food, beverages, tobacco and narcotics**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Retail Trade Index (RTI) for food (aggregation of class 47.1.1 and group 47.2 of CNAE 2009). Turnover at current prices | INE | Value | Monthly | m-1 / m+1 |
| Food consumption panel | MAPA | Value | Monthly | m-1 / m |
| Sales of tobacco products to retailers | CMT | Value | Monthly | m-1 / m |
| CPI for food (subgroup 01.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for non-alcoholic beverages (subgroup 01.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for alcoholic beverages (subgroup 02.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for tobacco (subgroup 02.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |

Notes:
MAPA: Ministry of Agriculture, Fisheries and Food
CMT: Commissioner for the Tobacco Market

In all cases, for some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. In addition, for the flash estimates, partial early results for RTI have been available in some quarters.

### 5.1.2 Household final consumption expenditure on non-durable non-food goods

In the case of *Households final consumption expenditure (HFCE) on water supply and various services and on electricity, gas and other fuels* (COICOP classes 04.4 and 04.5), synthetic price and volume indicators are constructed, whereas for the remaining *Households final consumption expenditure (HFCE) on non-durable non-food goods*, synthetic price and value indicators are compiled, based on the information sources listed in the following table. The value indicator for water supply and various services and for electricity, gas and other fuels (COICOP classes 04.4 and 04.5), as well as the volume indicator for the remaining households' final consumption expenditure (*HFCE*) on non-durable non-food goods, are obtained implicitly.

**Aggregate:** **Household final consumption expenditure on non-durable non-food goods**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Retail Trade Index (RTI) for Health (aggregation of classes 47.7.3, 47.7.4 and 47.7.5 of CNAE 2009). Turnover at current prices | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for Newspaper and Magazine Publishing (aggregation of classes 58.13 and 58.14 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Availability of production of paper and cardboard articles (group 17.2 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availability of production of soaps, detergents and other cleaning and polishing preparations (group 20.4 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Expenditure (euros paid by the user) on medicines and health products prescribed by the National Health System, in pharmacies, funded by public budgets of the Autonomous Communities and the National Institute of Health Management (INGESA) | Ministry of Health | Value | Monthly | m-3 / m-1 |
| Consumption of petroleum products (liquefied petroleum gases, gasoline and gasoil) | CORES | Volume | Monthly | m-1 / m+1 |
| Consumption of natural gas at pressure ≤ 4 bars | CORES | Volume | Monthly | m-1 / m+1 |
| Household electricity consumption | CNMC | Volume | Monthly | m-3 / m-1 |
| Water consumption | Canal de Isabel II | Volume | Monthly | m-1 / m |
| CPI for Water Supply (class 04.4.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Electricity, Gas and Other Fuels (subgroup 04.5 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Gas (class 04.5.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Liquid Fuels (class 04.5.3 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Non-durable Household Goods (class 05.6.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Pharmaceutical Products (class 06.1.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Fuels and Lubricants (class 07.2.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Press (class 09.5.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Other Articles and Products for Personal Care (class 12.1.3 of ECOICOP) | INE | Price | Monthly | m / m+2 |

Notes:
CORES: Corporation of Strategic Reserves of Petroleum Products
CNMC: National Commission on Markets and Competition

For recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. In addition, for the flash estimates, partial early results from RTI, SSAI, IPI, IPRI, XPI and MPI have been available in some quarters.

### 5.1.3 Household final consumption expenditure on semi-durable goods

Synthetic price and value indicators are constructed from the information sources listed in the following tables. Synthetic volume indicators are derived implicitly.

**Aggregate:** **Household final consumption expenditure on semi-durable goods**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Retail Trade Index (RTI) of Personal Equipment (aggregation of classes 47.51, 47.71 and 47.72 of CNAE 2009). Turnover at current prices | INE | Value | Monthly | m-1 / m+1 |
| Retail Trade Index (RTI) of Cultural and Recreational Articles in Specialized Stores (group 47.6 of CNAE 2009). Turnover at current prices | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for Book Publishing (class 58.11 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Availability of Textile Industry (division 13 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availability of Manufacture of Wearing Apparel (division 14 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availability of Tanning and Dressing of Leather; Manufacture of Luggage, Handbags, Saddlery and Harness; Dressing and Dyeing of Fur (group 15.1 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availability of Manufacture of Footwear (group 15.2 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availability of Manufacture of Games and Toys (group 32.4 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Domestic Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Textile, Apparel and Footwear Industry | AEAT | Value | Quarterly | q-1 / q |
| CPI for Clothing (subgroup 03.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Footwear (subgroup 03.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Household Textiles (class 05.2.0 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Recreation, Culture and Entertainment (group 09 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Recording Media for Image, Sound and Data (class 09.1.4 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Games, Toys and Hobbies (class 09.3.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Books (class 09.5.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |

Notes:
AEAT: State Tax Administration Agency

For recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. In addition, for the flash estimates, partial early results from RTI, SSAI, IPI, IPRI, XPI and MPI have been available in some quarters.

### 5.1.4 Household final consumption expenditure on durable goods

Synthetic price and value indicators are constructed from the information sources listed in the following tables. Synthetic volume indicators are derived implicitly.

**Aggregate:** **Household final consumption expenditure on durable goods**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Retail Trade Index (RTI) of Household Equipment (classes 47.4.3, 47.5.2, 47.5.4, 47.5.9 and 47.6.3 of CNAE 2009). Turnover at current prices | INE | Value | Monthly | m-1 / m+1 |
| Retail Trade Index (RTI) of Personal Equipment (classes 47.5.1, 47.7.1 and 47.7.2 of CNAE 2009). Turnover at current prices | INE | Value | Monthly | m-1 / m+1 |
| Retail Trade Index (RTI) of Health (classes 47.7.3, 47.7.4 and 47.7.5 of CNAE 2009). Turnover at current prices | INE | Value | Monthly | m-1 / m+1 |
| Availability of Manufacture of Computers and Peripheral Equipment (group 26.2 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availability of Manufacture of Consumer Electronics (group 26.4 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availability of Manufacture of Household Appliances (group 27.5 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availability of Manufacture of Furniture (division 31 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availability of Manufacture of Jewellery, Costume Jewellery and Related Articles (group 32.1 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Registrations of Vehicles for Private Use | Own compilation | Value | Quarterly | q-1 / q |
| Registrations of Motorcycles and Mopeds | Own compilation | Value | Quarterly | q-1 / q |
| CPI for Furniture and Furnishings, Carpets and Other Floor Coverings (class 05.1.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Major Household Appliances, Whether Electric or Not, and Other Major Household Equipment (class 05.3.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Tools and Equipment for House and Garden (subgroup 05.5 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Other Therapeutic Appliances and Equipment (class 06.1.3 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Motor Cars (class 07.1.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Motorcycles (class 07.1.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Telephone and Fax Equipment (class 08.2.0 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Recreation and Culture (group 09 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Audio-visual, Photographic and Information Processing Equipment (subgroup 09.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Equipment for the Reception, Recording and Reproduction of Sound and Pictures (class 09.1.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Information Processing Equipment (class 09.1.3 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Other Articles and Products for Personal Care (class 12.1.3 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Jewellery, Clocks and Watches (class 12.3.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |

The estimation relies on the processing of the microdata on vehicle registrations provided by the Directorate-General for Traffic (DGT), carried out jointly by the Subdirectorate-General of Annual Accounts and the Subdirectorate-General of Quarterly Accounts. The processing of these microdata makes it possible to obtain the indicators of registrations of vehicles for private use and registrations of motorcycles and mopeds shown in the table.

For the estimation, average prices are calculated by type of vehicle and extrapolated for those periods in which no structural information is available. In addition, each record is assigned an economic destination to ensure the correct measurement of the

macroeconomic aggregates related to gross capital formation, distinguishing between acquisitions for households' final consumption (households purchasing a vehicle for private use) and acquisitions for gross fixed capital formation (enterprises or institutions acquiring vehicles as investment goods). It should be noted that these classifications may differ from those used in other statistical sources, as they are adapted to the standards of the national accounts systems and to the definitions and concepts applied therein.

Using the real-time processing of DGT microdata and the extrapolation of prices by type of vehicle, the corresponding quarterly estimates are compiled.

For some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. In addition, for the flash estimates, partial early results from RTI, IPI, IPRI, XPI and MPI have been available in some quarters for the compilation of the Commodity Flow indicators.

### 5.1.5 Household final consumption expenditure on services.

Synthetic price and value indicators are constructed from the information sources listed in the following tables. Synthetic volume indicators are derived implicitly.

There are two exceptions in which synthetic indicators of prices and volume are constructed, obtaining the indicator of value implicitly: spending on consumption of domestic service and spending on consumption of housing rental services.

In the case of domestic service consumption, the CPI for domestic service and other housing services (subclass 05.6.2 of the ECOICOP) is taken as the price indicator; the volume estimate corresponds to that of full-time equivalent jobs in household services as employers of domestic staff (section T of NACE REV. 2).

In the case of rental services, the CPI for actual rentals for housing (ECOICOP class 04.1.1) is used as the price indicator, while the end-of-construction certificates (number of dwellings for residential use) from the *Building Works Permits* statistics of the Professional Associations of Technical Architects (Ministry of Transport and Sustainable Mobility), together with the information from the INE's Resident Tourism Survey, as shown in the sources table, are used as the volume indicators.

**Aggregate:** **Household final consumption expenditure on services**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Services Sector Activity Indicators (SSAI) for Maintenance and repair of motor vehicles (group 45.2 of the CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for Other passenger land transport (aggregation of classes 49.3.1 and 49.3.9 of the CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for Water transport (division 50 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for Air transport (division 51 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for Warehousing and support activities for transportation (division 52 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for Postal and courier activities (division 53 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for Accommodation (division 55 of CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for Food and beverage service activities (division 56 of the CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Services Sector Activity Indicators (SSAI) for Travel agency, tour operator reservation service and related activities (division 79 of the CNAE 2009) | INE | Value | Monthly | m-1 / m+1 |
| Residents Travel Survey. Total expenditure on rented dwellings in Spain | INE | Value | Quarterly | q-1 / q |
| Residents Travel Survey. Total expenditure on owner-occupied dwellings in Spain | INE | Value | Quarterly | q-1 / q |
| Domestic sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Services | AEAT | Value | Quarterly | q-1 / q |
| Domestic sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Transport and storage | AEAT | Value | Quarterly | q-1 / q |
| Domestic sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Accommodation and food service activities | AEAT | Value | Quarterly | q-1 / q |
| Domestic sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Social, cultural, recreational and other services | AEAT | Value | Quarterly | q-1 / q |
| Domestic sales at current prices from the Statistics on Sales, Employment and Wages of Large Companies and SMEs (VESGEP) for Other services | AEAT | Value | Quarterly | q-1 / q |
| Box office revenues in cinemas | Ministry of Culture | Value | Monthly | m-2 / m |
| Revenue from the telecommunications sector | CNMC | Value | Quarterly | q-1 / q |
| Amounts wagered in online gambling | MDSCA2030 | Value | Monthly | m-3 / m-3 |
| Sales of active games | SELAE | Value | Quarterly | q / q |
| Sales of lotteries and games of chance | ONCE | Value | Quarterly | q / q |
| Residents Travel Survey. Number of leisure, recreation, and vacation trips | INE | Volume | Monthly | m-3 / m-1 |
| Passenger transport statistics (PT). Urban transport | INE | Volume | Monthly | m-1 / m+1 |
| Passenger transport statistics (PT). Interurban regular bus transport | INE | Volume | Monthly | m-1 / m+1 |
| Passenger transport statistics (PT). Special and discretionary transport | INE | Volume | Monthly | m-1 / m+1 |
| Hotel Occupancy Survey (HOS). Overnight stays in hotel establishments | INE | Volume | Monthly | m-1 / m+1 |
| Holiday Campsite Occupancy Survey. Overnight stays | INE | Volume | Monthly | m-1 / m+1 |
| Rail transport statistics. Passengers transported. Passenger-km | INE | Volume | Quarterly | q-1 / q |
| Construction management visas from the Associations of Technical Architects (Building works): End of works certifications. Number of dwellings by developer | MTMS | Volume | Monthly | m-2 / m |
| Rail transport. Renfe Operadora. Passenger-kilometer | MTMS | Volume | Monthly | m-1 / m+1 |
| Passenger transport. Air. Commercial. Total | AENA | Volume | Monthly | m / m+2 |
| Passenger transport. Maritime | Puertos del Estado | Volume | Monthly | m-1 / m+1 |
| People employed in Education (division 85 of the CNAE 2009) | Own compilation | Volume | Quarterly | q / q |
| People employed in Human health activities (division 86 of the CNAE 2009) | Own compilation | Volume | Quarterly | q / q |

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| CPI for Actual Rentals for Housing (class 04.1.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Out-patient Services (subgroup 06.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Hospital Services (subgroup 06.3 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Passenger Transport by Railway (class 07.3.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Passenger Transport by Road (class 07.3.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Passenger Transport by Air (class 07.3.3 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Passenger Transport by Sea and Inland Waterways (class 07.3.4 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Combined Passenger Transport (class 07.3.5 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Telephone and Telefax Services (class 08.3.0 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Recreational and Cultural Services (subgroup 09.4 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Recreational and Sporting Services (class 09.4.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Package Holidays (subgroup 09.6 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Education (group 10 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Catering Services (subgroup 11.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Accommodation Services (class 11.2.0 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Insurance Services (subgroup 12.5 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Financial Services n.e.c. (subgroup 12.6 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Services excluding Actual Rentals for Housing (special group) | INE | Price | Monthly | m / m+2 |
| Residents Travel Survey. Average daily expenditure per person on rented dwellings in Spain | INE | Price | Quarterly | q-1 / q |
| Residents Travel Survey. Average daily expenditure per person on owner-occupied dwellings in Spain | INE | Price | Quarterly | q-1 / q |
| Postal Service Rates | Grupo Correos | Price | Annual | a / a |

Notes:

AENA: Spanish Airports and Air Navigation
CNMC: National Commission on Markets and Competition
MDSCA2030: Ministry of Social Rights, Consumer Affairs and Agenda 2030
MTMS: Ministry of Transport and Sustainable Mobility
ONCE: Spanish National Organization of the Blind
SELAE: State Lottery and Betting Organization

For some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. In addition, for the flash estimates, partial early results from SSAI and HOS have been available in some quarters.

### 5.2 Final consumption expenditure by General Government

The final consumption expenditure (FCE) of the General Government is equal to their total production (P.1) (measured as the sum of costs, that is, compensation of employees, intermediate consumption, consumption of fixed capital and other taxes on production to be paid), plus spending on goods and services acquired in the market and provided free to households (D.632 In kind social transfers acquired on the market), less market production (P .11), production for personal final use (P.12) and payments for other non-market production (P.131).

The QNAS integrates the value to previous flows of the final consumption expenditure of the General Government and of its different components, recorded in the Quarterly Accounts of the General Government, prepared by the IGAE.

On the date of publication of the flash results, such quarterly results of the General Government institutional sector (S.13) are not yet available, although there are monthly State accounts (part of the institutional subsector S.1311 Central Government, excluding Social Security funds) for the three months of the reference quarter and for the first two months of Central Government, excluding social security funds (S.1311), Regional Government, excluding social security funds (S.1312) and Social Security Funds (S.1314). With all the information available, an estimate of the FCE of the General Government for the quarter as a whole is made based on an econometric modelling of its components.

Regarding the evolution in volume, each of the components of the FCE is deflated (intermediate consumption, compensation of employees, other taxes on production and fixed capital consumption):

In the case of compensation of employees, its evolution in volume is equated with that of the employment input of General Government (in terms of jobs) carrying out a reconciliation of the evolution of the same and of the average remuneration of the employees of the General Government, making use of the available information sources (Labour Force Survey and statistics of public employees affiliated to the Social Security system, disseminated by the Ministry of Inclusion, Social Security and Migrations).

The volume estimate of consumption of fixed capital is derived from its calculation using the Perpetual Inventory Method on an annual basis, which provides the estimate of the aggregate at current prices and at previous year's prices, followed by its subsequent quarterly breakdown. The rest of the components, according to the following price indices:

- General weighted average of the Consumer Price Index (CPI), the Industrial Price Index (IPRI) and the Services Producer Price Index (SPPI) in the case of intermediate consumption.
- The general CPI in the case of in-kind social transfers acquired in the market, market production and production for personal final use.

### 5.3 Household final consumption expenditure

The final consumption expenditure of NPISHs includes, in the Spanish case, the value of the goods and services produced by NPISHs that do not constitute gross capital formation on their own account or expenditure by households or other units, being the result of their total production (P.1) (measured as the sum of costs, that is, compensation to employees, intermediate consumption, fixed capital consumption and other taxes on production to be paid net of subsidies) minus market production (P.11) and production for personal final use (P.12).
La evolución de dichas componentes se estima trimestralmente en función de la información disponible de una muestra de dichas unidades para las que se dispone de información contable trimestral, de la evolución de dichas componentes en las unidades de no mercado de las Administraciones Públicas y de una media ponderada de la evolución de dichas componentes en los períodos más recientes.

Regarding the evolution in volume, each of the components of the FCE is deflated (intermediate consumption, compensation of employees, other taxes on production and fixed capital consumption):

In the case of compensation of employees, its evolution in volume is compared to that of the employment input of NPISHs (in terms of jobs) carrying out a reconciliation of the evolution thereof and the average remuneration of the employees of such entities, making use of the available information sources (results of the Labour Force Survey and the Social Security Affiliation Statistics in the branches of activity where the activity of these types of entities is concentrated).

The volume estimate of the fixed capital consumption is derived from its calculation through the Permanent Inventory Method in annual terms, which allows for obtaining the estimate of the aggregate at current prices and at prices from the previous year, and their subsequent quarterly realization based on the quarterly flows of gross fixed capital formation in the sector.

The rest of the components, according to the following price indices:

- Weighted average of the CPI, IPRI and SPPI, in the case of intermediate consumption.
- The CPI in the case of market production.

For some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. In addition, for the flash estimates, partial early results from IPRI have been available in some quarters.

## 5.4 Gross capital formation

### 5.4.1 Gross capital formation in tangible fixed assets: Construction

#### 5.4.1.1 Gross fixed capital formation. Tangible fixed assets. Construction. Dwellings

Synthetic price and volume indicators are constructed from the sources listed in the following tables. Synthetic indicators of value are derived implicitly.

**Aggregate:** **GFCF. Tangible fixed assets. Construction. Dwellings**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Mortgage Statistics (M). Number of mortgages constituted on dwellings | INE | Volume | Monthly | m-1 / m |
| Production Index of the Construction Industry. Production: works carried out by companies (including real estate development) in residential building | MTMS | Volume | Monthly | m-1 / m |
| Number of dwellings started. Free-market and subsidised housing | MTMS | Volume | Monthly | m-3 / m-3 |
| Building permits from the Colleges of Technical Architects (building works). Permits for new construction, extensions and/or refurbishment | MTMS | Volume | Monthly | m-2 / m |
| Construction Cost Index (CCI). Residential building | MTMS | Price | Monthly | m-2 / m |

Note:
MTMS: Ministry of Transport and Sustainable Mobility

For some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors.

#### 5.4.1.2 Gross fixed capital formation. Tangible fixed assets. Construction. Other buildings and structures

Synthetic price and volume indicators are constructed from the sources listed in the following tables. Synthetic indicators of volume are derived implicitly.

**Aggregate:** **GFCF. Tangible fixed assets. Construction. Other buildings and structures**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Daily domestic sales from the Immediate Supply of Information system (SII). Civil engineering | AEAT | Value | Monthly | m / m+2 |
| Construction Industry Production Indices. Production: works carried out by companies (including real estate development) in non-residential building | MTMS | Value | Monthly | m-1 / m |
| Construction Industry Production Indices. Production: works carried out by companies (including real estate development) in civil engineering | MTMS | Value | Monthly | m-1 / m |
| Official construction tender. Amount of official tender with Public Administrations as contracting agent | MTMS | Value | Monthly | m-1 / m |
| Construction Cost Index (CCI). Non-residential construction | MTMS | Price | Monthly | m-2 / m |
| Construction Cost Index (CCI). Civil engineering | MTMS | Price | Monthly | m-2 / m |

Notes:
MTMS: Ministry of Transport and Sustainable Mobility
AEAT: State Tax Administration Agency

For some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE,

RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors.5.4.2 Gross capital formation in tangible fixed assets: machinery, capital goods and weapon systems

### 5.4.2.1 Gross fixed capital formation. Machinery, capital goods and weapons systems. Transport equipment

Synthetic volume and value indicators are constructed using the sources listed in the following table. The synthetic price indicator is obtained implicitly.

**Aggregate:** **GFCF. Tangible fixed assets. Transport equipment**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Registrations of motor vehicles | Own compilation | Value | Quarterly | q-1 / q |
| Registrations of trailers and semi-trailers | Own compilation | Value | Quarterly | q-1 / q |
| Availabilities of Manufacture of components, parts and accessories for motor vehicles (group 29.3 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availabilities of Manufacture of other transport equipment (division 30 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Registrations of motor vehicles | Own compilation | Volume | Quarterly | q-1 / q |
| Registrations of trailers and semi-trailers | Own compilation | Volume | Quarterly | q-1 / q |
| Availabilities of Manufacture of components, parts and accessories for motor vehicles (group 29.3 of CNAE 2009) | Own compilation | Volume | Monthly | m-1 / m |
| Availabilities of Manufacture of other transport equipment (division 30 of CNAE 2009) | Own compilation | Volume | Monthly | m-1 / m |

The estimation relies on the processing of the microdata on vehicle registrations provided by the Directorate-General for Traffic (DGT), carried out jointly by the Subdirectorate-General of Annual Accounts and the Subdirectorate-General of Quarterly Accounts. The processing of these microdata makes it possible to obtain the estimates relating to groups 29.1 and 29.2 of NACE REV. 2.

For the estimation, average prices are calculated by type of vehicle and extrapolated for those periods in which no structural information is available. In addition, each record is assigned an economic destination to ensure the correct measurement of the macroeconomic aggregates related to gross capital formation, distinguishing between acquisitions for households' final consumption (households purchasing a vehicle for private use) and acquisitions for gross fixed capital formation (enterprises or institutions acquiring vehicles as investment goods). It should be noted that these classifications may differ from those used in other statistical sources, as they are adapted to the standards of the national accounts systems and to the definitions and concepts applied therein.

Using the real-time processing of DGT microdata and the extrapolation of prices by type of vehicle, the corresponding quarterly estimates are compiled.

For some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. In addition, for the flash estimates, partial early results from IPI, IPRI, XPI and MPI have been available in some quarters for the compilation of the Commodity Flow indicators.

### 5.4.2.2 Gross fixed capital formation. Machinery, capital goods and weapons systems. Other

Synthetic indicators of value and volume are constructed from the sources listed in the following tables. Synthetic price indicators are obtained implicitly.

**Aggregate:** **GFCF. Tangible fixed assets. Machinery, capital goods and weapons systems (excluding Transport equipment)**

| Base indicator | Source | Type of indicator | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Availabilities of Manufacture of consumer electronics (group 26.4 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availabilities of Manufacture of instruments and appliances for measuring, testing and navigation; manufacture of watches and clocks (group 26.5 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availabilities of Manufacture of irradiation, electromedical and electrotherapeutic equipment (group 26.6 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availabilities of Manufacture of electric motors, generators and transformers, and of electricity distribution and control apparatus (group 27.1 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availabilities of Manufacture of batteries and accumulators (group 27.2 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availabilities of Manufacture of wires and wiring devices (group 27.3 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availabilities of Manufacture of electric lamps and lighting equipment (group 27.4 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availabilities of Manufacture of domestic appliances (group 27.5 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availabilities of Manufacture of other electrical equipment (group 27.9 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availabilities of Manufacture of machinery and equipment n.e.c. (division 28 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availabilities of Manufacture of furniture (division 31 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availabilities of Other manufacturing industries (division 32 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availabilities of Repair and installation of machinery and equipment (division 33 of CNAE 2009) | Own compilation | Value | Monthly | m-1 / m |
| Availabilities of Manufacture of consumer electronics (group 26.4 of CNAE 2009) | Own compilation | Volume | Monthly | m-1 / m |
| Availabilities of Manufacture of instruments and appliances for measuring, testing and navigation; manufacture of watches and clocks (group 26.5 of CNAE 2009) | Own compilation | Volume | Monthly | m-1 / m |
| Availabilities of Manufacture of irradiation, electromedical and electrotherapeutic equipment (group 26.6 of CNAE 2009) | Own compilation | Volume | Monthly | m-1 / m |
| Availabilities of Manufacture of electric motors, generators and transformers, and of electricity distribution and control apparatus (group 27.1 of CNAE 2009) | Own compilation | Volume | Monthly | m-1 / m |
| Availabilities of Manufacture of batteries and accumulators (group 27.2 of CNAE 2009) | Own compilation | Volume | Monthly | m-1 / m |
| Availabilities of Manufacture of wires and wiring devices (group 27.3 of CNAE 2009) | Own compilation | Volume | Monthly | m-1 / m |
| Availabilities of Manufacture of electric lamps and lighting equipment (group 27.4 of CNAE 2009) | Own compilation | Volume | Monthly | m-1 / m |
| Availabilities of Manufacture of domestic appliances (group 27.5 of CNAE 2009) | Own compilation | Volume | Monthly | m-1 / m |
| Availabilities of Manufacture of other electrical equipment (group 27.9 of CNAE 2009) | Own compilation | Volume | Monthly | m-1 / m |
| Availabilities of Manufacture of machinery and equipment n.e.c. (division 28 of CNAE 2009) | Own compilation | Volume | Monthly | m-1 / m |
| Availabilities of Manufacture of furniture (division 31 of CNAE 2009) | Own compilation | Volume | Monthly | m-1 / m |
| Availabilities of Other manufacturing industries (division 32 of CNAE 2009) | Own compilation | Volume | Monthly | m-1 / m |
| Availabilities of Repair and installation of machinery and equipment (division 33 of CNAE 2009) | Own compilation | Volume | Monthly | m-1 / m |

For some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. In addition, for the flash estimates, partial early results from IPI, IPRI, XPI and MPI have been available in some quarters for the compilation of the Commodity Flow indicators.

### 5.4.3 Gross fixed capital formation. cultivated biological resources

The evolution in value at current prices and in volume of this estimated aggregate in the periods for which there is no annual estimate based on the prediction obtained through an ARIMA modelling of the available historical series. The evolution of its price is obtained implicitly.

### 5.4.4 Gross capital formation. Intangible fixed assets: intellectual property products

In the case of *originals of recreational, artistic and literary works,* synthetic price and volume indicators are constructed using the sources listed in the following table, which also includes those used to obtain the synthetic price and value indicators for the remaining *intellectual property assets*. The synthetic value indicators for *originals of recreational, artistic and literary works*, as well as the synthetic volume indicators for the other *intellectual property assets*, are obtained implicitly.

**Aggregate:** **GFCF. Intangible fixed assets. Intellectual property products**

| Base indicator | Source | Type of indicator | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Availabilities of Motion picture, video and television programme production, sound recording and music publishing activities (division 59 of CNAE 2009) | Own compilation | Value | Quarterly | q-1 / q |
| Availabilities of Programming and broadcasting activities (division 60 of CNAE 2009) | Own compilation | Value | Quarterly | q-1 / q |
| Availabilities of Computer programming, consultancy and related activities (division 62 of CNAE 2009) | Own compilation | Value | Quarterly | q-1 / q |
| Availabilities of Motion picture, video and television programme production, sound recording and music publishing activities (division 59 of CNAE 2009) | Own compilation | Volume | Quarterly | q-1 / q |
| Availabilities of Programming and broadcasting activities (division 60 of CNAE 2009) | Own compilation | Volume | Quarterly | q-1 / q |
| Availabilities of Computer programming, consultancy and related activities (division 62 of CNAE 2009) | Own compilation | Volume | Quarterly | q-1 / q |
| Cinema spectators | Ministry of Culture | Volume | Monthly | m-2 / m |
| Recorded music market in Spain | Promusicae | Volume | Semi-annual | s-1 / s |
| People employed in R&D (division 72 of CNAE 2009) | INE | Volume | Quarterly | q-1 / q |
| CPI for recording media for image, sound and data (class 09.1.4 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for cultural services (class 09.4.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for services (special group) | INE | Price | Monthly | m / m+2 |

Note:
Promusicae: Music Producers of Spain

For some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors.

### 5.4.5 Changes in inventories and acquisition less disposals of valuables

The synthetic indicator of the quarterly *change in inventories and acquisitions less disposals of valuables* objects at current prices is prepared, on the one hand, from a linear regression model that relates the annual aggregate of the change in inventories of Wholesale and retail trade; repair of motor vehicles and motorcycles with the turnover, according to the Annual Trade Survey, the IASS and sales, according to Sales, Employment and Salaries of Large Companies of the AEAT, of said activities and with the introductions/imports of consumer goods and equipment in the foreign trade statistics of the AEAT Customs and Special Taxes Department; on the other, based on a linear regression model that relates the annual aggregate of the change in inventories of industrial activities with the turnover, according to the Structural Survey of Companies, sales, according to Sales, Employment and Salaries of Large Companies of the AEAT and introductions/imports of consumer goods and equipment of those same activities.

In the case of prices, the synthetic indicator incorporates the general IPRI and CPI for the fifteen products with the highest volumes among those making up changes in inventories, covering around 90% of these.

For recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors.

### 5.5 Imports and exports of goods and services

The sources and methods used for exports and imports of goods, on the one hand, and for exports and imports of services, on the other, are described below. Within the latter, expenditure by non-resident households in the economic territory / expenditure by resident households abroad is distinguished from exports and imports of other services.

In any case, the QNAS integrates the current-price values of the *external account of goods and services* of the Rest of the World Account within the *Quarterly Non-Financial Accounts of the Institutional Sectors* (QNFIS)[44], consistent with the results of the *Trade Balance of the Balance of Payments and International Investment Position* published by the Bank of Spain, and compiled mainly from the *Foreign Trade Statistics* of the Customs and Excise Department of the AEAT, as well as from the *International Trade in Services Survey* (ITSS)[45] and the *Tourist Expenditure Survey* (EGATUR) of INE.

To ensure consistency between the quarterly and annual price and volume estimates of imports and exports of goods and services, the current-price values are broken down to an equivalent level of product or country detail, and Laspeyres-type volume indices with annual weights are calculated (together with implicit Paasche price indices). For the quarterly chained indices, the *Annual Overlap* method is applied. This technique ensures that the quarterly Laspeyres volume estimates chained annually are consistent with the corresponding annual Laspeyres volume estimates, as both sets of estimates are based on the same weighting system.

#### 5.5.1 Export of goods

The current-price value of *exports of goods* therefore corresponds to that recorded in the *external account of goods* and services of the Rest of the World Account within the *Quarterly Non-Financial Accounts of the Institutional Sectors*.

For the flash estimates, the year-on-year evolution of dispatches/exports of goods, according to the month of transaction in the Foreign Trade Statistics of the Customs and Excise Department of the Spanish Tax Agency (AEAT), is used for the first two months of the quarter. A forecast for the third month is then produced using various time-series modelling techniques.

The indicators used to calculate the price estimates are detailed in the following table.

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44 https://www.ine.es/dyngs/INEbase/operacion.htm?c=Estadistica_C&cid=1254736165305&idp=1254735576581

45 The INE has discontinued the publication of this statistical operation, although it continues to compile it for use as an input to the Balance of Payments statistics and the National Accounts of the Spanish economy, as well as to the two new annual statistics that began to be published in 2024 to replace the ECIS: International Trade in Services by Enterprise Characteristics (STEC) and International Trade in Services by Modes of Supply (MoS).

**Aggregate:** **Export of goods**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Export price indices (XPI) for Total industry | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Extractive industries (section B of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Mining of metal ores (division 07 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Other mining and quarrying (division 08 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Processing and preserving of meat and production of meat products (group 10.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Processing and preserving of fish, crustaceans and molluscs (group 10.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Processing and preserving of fruit and vegetables (group 10.3 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of vegetable and animal oils and fats (group 10.4 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of dairy products (group 10.5 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of grain mill products, starches and starch products (group 10.6 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of bakery and farinaceous products (group 10.7 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of other food products (group 10.8 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of prepared animal feeds (group 10.9 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Distilling, rectifying and blending of spirits (class 11.0.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of wines (class 11.0.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of soft drinks; production of mineral waters and other bottled waters (class 11.0.7 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of tobacco products (division 12 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of textiles (division 13 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of wearing apparel (division 14 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of leather and footwear (division 15 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (division 16 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of pulp, paper and paperboard (group 17.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of articles of paper and paperboard (group 17.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Printing and reproduction of recorded media (group 18.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of coke and refined petroleum products (group 19.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of basic chemicals, fertilizers and nitrogen compounds, plastics and synthetic rubber in primary forms (group 20.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of pesticides and other agrochemical products (group 20.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of paints, varnishes and similar coatings, printing ink and mastics (group 20.3 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations (group 20.4 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of other chemical products (group 20.5 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of man-made fibres (group 20.6 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of pharmaceutical products (division 21 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of rubber products (group 22.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of plastic products (group 22.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Export price indices (XPI) for Manufacture of glass and glass products (group 23.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of refractory ceramic products (group 23.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of ceramic products for construction (group 23.3 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of other ceramic products (group 23.4 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of cement, lime and plaster (group 23.5 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of articles of concrete, cement and plaster (group 23.6 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Cutting, shaping and finishing of stone (group 23.7 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of abrasive products and other non-metallic mineral products n.e.c. (group 23.9 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of basic metals (division 24 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of fabricated metal products, except machinery and equipment (division 25 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of electronic components and boards (group 26.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of computers and peripheral equipment (group 26.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of communication equipment (group 26.3 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of consumer electronics (group 26.4 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of instruments and appliances for measuring, testing and navigation; manufacture of watches and clocks (group 26.5 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of irradiation, electromedical and electrotherapeutic equipment (group 26.6 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of electric motors, generators and transformers, and of electricity distribution and control apparatus (group 27.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of batteries and accumulators (group 27.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of wires and wiring devices (group 27.3 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of electric lamps and lighting equipment (group 27.4 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of domestic appliances (group 27.5 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of other electrical equipment (group 27.9 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of machinery and equipment n.e.c. (division 28 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of motor vehicles (group 29.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers (group 29.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of parts and accessories for motor vehicles (group 29.3 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of other transport equipment (division 30 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of railway locomotives and rolling stock (group 30.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of air and spacecraft and related machinery (group 30.3 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of other transport equipment n.e.c. (group 30.9 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of furniture (division 31 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Other manufacturing (division 32 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Repair and installation of machinery and equipment (division 33 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Electric power generation, transmission and distribution (group 35.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Export price indices (XPI) for Manufacture of gas; distribution of gaseous fuels through mains (group 35.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Unit value indices (IVU) of Export of agricultural, forestry and fishing products (section A of CPA Rev.2.1) | MINECO | Price | Monthly | m-1 / m+1 |
| Unit value indices (IVU) of Export of waste collection services (code 381 of CPA Rev.2.1) | MINECO | Price | Monthly | m-1 / m+1 |

Note:
MINECO: Ministry of Economy, Trade and Enterprise

For some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. In addition, for the flash estimates, partial early results from XPI have been available in some quarters.

### 5.5.2 Import of goods

The current-price value of *imports of goods* corresponds to the amount recorded in the *external account of goods and services* of the Rest of the World Account within the *Quarterly Non-Financial Accounts of the Institutional Sectors*[46].

For the flash estimates, the year-on-year evolution of *introductions/imports of goods*, according to the *month of transaction* in the *Foreign Trade Statistics* of the Customs and Excise Department of the Spanish Tax Agency (AEAT), is used for the first two months of the quarter. A forecast for the third month is then produced using various time-series modelling techniques.

The indicators used to calculate the price and volume estimates are detailed in the following table.

**Aggregate:** **Imports of goods**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Import price indices (MPI) for Total industry | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Mining of hard coal and lignite (division 05 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Extraction of crude petroleum (group 06.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Extraction of natural gas (group 06.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Mining of metal ores (division 07 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Other mining and quarrying (division 08 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Processing and preserving of meat and production of meat products (group 10.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Processing and preserving of fish, crustaceans and molluscs (group 10.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Processing and preserving of fruit and vegetables (group 10.3 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of vegetable and animal oils and fats (group 10.4 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of dairy products (group 10.5 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of grain mill products, starches and starch products (group 10.6 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of bakery and farinaceous products (group 10.7 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of other food products (group 10.8 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of prepared animal feeds (group 10.9 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |

46 https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736165305&menu=ultiDatos&idp=1254735576581

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Import price indices (MPI) for Distilling, rectifying and blending of spirits (class 11.0.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of wines (class 11.0.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of beer (class 11.0.5 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of soft drinks; production of mineral waters and other bottled waters (class 11.0.7 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of tobacco products (division 12 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of textiles (division 13 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of wearing apparel (division 14 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of leather and footwear (division 15 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (division 16 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of pulp, paper and paperboard (group 17.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of articles of paper and paperboard (group 17.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of coke and refined petroleum products (division 19 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of basic chemicals, fertilizers and nitrogen compounds, plastics and synthetic rubber in primary forms (group 20.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of pesticides and other agrochemical products (group 20.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of paints, varnishes and similar coatings, printing ink and mastics (group 20.3 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations (group 20.4 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of other chemical products (group 20.5 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of man-made fibres (group 20.6 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of pharmaceutical products (division 21 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of rubber products (group 22.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of plastic products (group 22.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of glass and glass products (group 23.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of refractory ceramic products (group 23.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of ceramic products for construction (group 23.3 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of other ceramic products (group 23.4 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of cement, lime and plaster (group 23.5 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of articles of concrete, cement and plaster (group 23.6 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Cutting, shaping and finishing of stone (group 23.7 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of abrasive products and other non-metallic mineral products n.e.c. (group 23.9 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of basic metals (division 24 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of fabricated metal products, except machinery and equipment (division 25 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of electronic components and boards (group 26.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of computers and peripheral equipment (group 26.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of communication equipment (group 26.3 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of consumer electronics (group 26.4 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of instruments and appliances for measuring, testing and navigation; manufacture of watches and clocks (group 26.5 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of irradiation, electromedical and electrotherapeutic equipment (group 26.6 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of optical instruments and photographic equipment (group 26.7 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of magnetic and optical media (group 26.8 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of electric motors, generators and transformers, and of electricity distribution and control apparatus (group 27.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of batteries and accumulators (group 27.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of wires and wiring devices (group 27.3 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of electric lamps and lighting equipment (group 27.4 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of domestic appliances (group 27.5 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of other electrical equipment (group 27.9 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Import price indices (MPI) for Manufacture of machinery and equipment n.e.c. (division 28 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of motor vehicles (group 29.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers (group 29.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of parts and accessories for motor vehicles (group 29.3 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of other transport equipment (division 30 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of railway locomotives and rolling stock (group 30.2 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of other transport equipment n.e.c. (group 30.9 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Manufacture of furniture (division 31 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Other manufacturing (division 32 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Import price indices (MPI) for Electric power generation, transmission and distribution (group 35.1 of CNAE 2009) | INE | Price | Monthly | m-1 / m+1 |
| Unit value indices (IVU) of Import of agricultural, forestry and fishing products (section A of CPA Rev.2.1) | MINECO | Price | Monthly | m-1 / m+1 |
| Unit value indices (IVU) of Import of waste collection services (code 381 of CPA Rev.2.1) | MINECO | Price | Monthly | m-1 / m+1 |
| CIF-FOB Adjustment Resident | Own compilation | Volume | Quarterly | q / q |
| CIF-FOB Adjustment Non-resident | Own compilation | Volume | Quarterly | q / q |

Note:
MINECO: Ministry of Economy, Trade and Enterprise

For some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. In addition, for the flash estimates, partial early results from MPI have been available in some quarters.

### 5.5.3 Export of services (excluding expenditure of non-resident on the economic territory)

The current-price value of exports of services corresponds to that recorded in the *external account of goods and services* of the Rest of the World Account within the *Quarterly Non-Financial Accounts of the Institutional Sectors*.

For the flash estimates, the value is obtained as the difference between total exports of goods and services (excluding *expenditure by non-resident households in the economic territory*) and *exports of goods*. Total exports of goods and services (excluding *expenditure by non-resident households in the economic territory*) correspond to the results of the Balance of Payments for the first two months of the quarter, compiled by the Bank of Spain, together with a forecast for the third month using different time-series modelling techniques.

The indicators used to calculate the price and volume estimates are detailed in the following table.

**Aggregate:** **Export of services (excluding spending by non-resident households in the economic territory)**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| General Services Producer Price Index (SPPI) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Land and pipeline transport (division 49 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Sea passenger transport (group 50.1 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Sea freight transport (group 50.2 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Air transport (B2All) (division 51 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Air passenger transport (B2B) (group 51B of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Warehousing and storage (group 52.1 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Support activities for transportation (group 52.2 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Postal and courier activities (B2All) (division 53 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Accommodation services (division 55 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Food and beverage service activities (division 56 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Publishing activities (division 58 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Motion picture, video, TV programme production, sound recording and music publishing (division 59 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Programming and broadcasting activities (division 60 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Telecommunications (B2All) (division 61 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Computer programming, consultancy and related activities (division 62 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Information service activities (division 63 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Real estate activities (division 68 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Legal and accounting activities (division 69 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Head office; management consultancy (division 70 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Architectural and engineering activities; technical testing and analysis (division 71 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Advertising and market research (division 73 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Other professional, scientific and technical activities (division 74 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Rental and leasing activities (division 77 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Employment activities (division 78 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Travel agency, tour operator and related reservation services (division 79 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Security and investigation activities (division 80 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Services to buildings and landscape activities (division 81 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Office administrative, office support and other business support activities (division 82 of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Transportation and storage (section H of CNAE 2009) | INE | Price | Quarterly | q-1 / q |
| Services Producer Price Index (SPPI) for Professional, scientific and technical activities (section M of CNAE 2009) | INE | Price | Quarterly | q-1 / q |

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| CPI for Water supply (class 04.4.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Waste collection (class 04.4.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Sewerage (class 04.4.3 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Repair of household appliances (class 05.3.3 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Domestic services and other services for households (class 05.6.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Health (group 06 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Acquisition of vehicles (subgroup 07.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Maintenance and repair of personal vehicles (class 07.2.3 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Railway passenger transport (class 07.3.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Road passenger transport (class 07.3.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI foe Veterinary and other services for pets (class 09.3.5 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Recreational and sporting services (class 09.4.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Cinemas, theatres, concert halls (subclass 09.4.2.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Museums, libraries, zoological gardens (subclass 09.4.2.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Games of chance (class 09.4.3 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Education (group 10 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Hairdressing and beauty establishments (class 12.1.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Social protection (class 12.4.0 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Insurance (subgroup 12.5 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Other financial services n.e.c. (class 12.6.2 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Administrative fees (subclass 12.7.0.1 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Other fees and services (subclass 12.7.0.4 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| Construction Cost Index (CCI) for Residential building | MTMS | Price | Monthly | m-2 / m |
| Construction Cost Index (CCI) for Non-residential building | MTMS | Price | Monthly | m-2 / m |
| Construction Cost Index (CCI) for Civil engineering | MTMS | Price | Monthly | m-2 / m |
| Construction Cost Index (CCI) for Building rehabilitation | MTMS | Price | Monthly | m-2 / m |
| CIF-FOB Adjustment Resident | Own compilation | Volume | Quarterly | q / q |

Note:
MTMS: Ministry of Transport and Sustainable Mobility

For some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors.

### 5.5.4 Import of services (excluding expenditure of non-resident on the economic territory)

The current-price value of *imports of services* corresponds to that recorded in the *external account of goods and services* of the Rest of the World Account within the *Quarterly Non-Financial Accounts of the Institutional Sectors.*

For the flash estimates, the value is obtained as the difference between total imports of goods and services (excluding *expenditure by resident households in the rest of the world*) and *imports of goods*. Total imports of goods and services (*excluding expenditure by resident households in the rest of the world*) correspond to the results of the Balance of Payments for the first two months of the quarter, compiled by the Bank of Spain, together with a forecast for the third month using different time-series modelling techniques.

The indicators used to calculate the price and volume estimates are detailed in the following table.

**Aggregate:** **Import of services (excluding spending by households residing in the rest of the world)**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Exchange rate of Australian Dollars per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Brazilian Reais per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Canadian Dollars per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Chilean Pesos per Euro | BdE | Price | Monthly | m-1 / m+1 |
| Exchange rate of Yuan per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of US Dollars per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of British Pounds per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Indian Rupees per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Japanese Yen per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Mexican Pesos per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Norwegian Krone per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Swiss Francs per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Turkish Lira per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Icelandic Króna per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Indonesian Rupiah per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of New Israeli Sheqalim per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of South Korean Won per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of New Zealand Dollars per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of South African Rand per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Moroccan Dirhams per Euro | BdE | Price | Monthly | m-2 / m |
| Exchange rate of Bulgarian Lev per Euro | BdE | Price | Monthly | m / m+2 |

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Exchange rate of Czech Koruna per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Danish Krone per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Hungarian Forints per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Polish Zlotys per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Romanian Leu per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Swedish Krona per Euro | BdE | Price | Monthly | m / m+2 |
| General CPI for Brazil | OECD | Price | Monthly | m / m+2 |
| General CPI for Canada | OECD | Price | Monthly | m / m+2 |
| General CPI for Chile | OECD | Price | Monthly | m / m+2 |
| General CPI for China | OECD | Price | Monthly | m / m+2 |
| General CPI for United States of America | OECD | Price | Monthly | m / m+2 |
| General CPI for United Kingdom | OECD | Price | Monthly | m / m+2 |
| General CPI for India | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for Japan | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for Mexico | INEGI | Price | Monthly | m-1 / m+1 |
| General CPI for Norway | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for Switzerland | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for Turkey | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for Iceland | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for Indonesia | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for Israel | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for Korea | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for New Zealand | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for South Africa | OECD | Price | Monthly | m-2 / m |
| General CPI for Morocco | Haut-Commissariat au Plan | Price | Monthly | m / m+2 |
| General CPI for Andorra | Departament d'Estadística del Govern d'Andorra | Price | Monthly | m / m+2 |
| General Harmonised Index of Consumer Prices (HCPI) for Portugal | Eurostat | Price | Monthly | m / m+2 |
| General Services Producer Price Index (SPPI) for Germany | Eurostat | Price | Quarterly | q-1 / q-1 |
| General Services Producer Price Index (SPPI) for Austria | Eurostat | Price | Quarterly | q-1 / q-1 |
| General Services Producer Price Index (SPPI) for Belgium | Eurostat | Price | Quarterly | q-1 / q-1 |
| General Services Producer Price Index (SPPI) for Bulgaria | Eurostat | Price | Quarterly | q-1 / q-1 |
| General Services Producer Price Index (SPPI) for Czech Republic | Eurostat | Price | Quarterly | q-1 / q |
| General Services Producer Price Index (SPPI) for Cyprus | Eurostat | Price | Quarterly | q-1 / q-1 |
| General Services Producer Price Index (SPPI) for Croatia | Eurostat | Price | Quarterly | q-1 / q-1 |
| General Services Producer Price Index (SPPI) for Denmark | Eurostat | Price | Quarterly | q-1 / q |
| General Services Producer Price Index (SPPI) for Slovakia | Eurostat | Price | Quarterly | q-1 / q |
| General Services Producer Price Index (SPPI) for Slovenia | Eurostat | Price | Quarterly | q-1 / q-1 |
| General Services Producer Price Index (SPPI) for Estonia | Eurostat | Price | Quarterly | q-1 / q |
| General Services Producer Price Index (SPPI) for Finland | Eurostat | Price | Quarterly | q-1 / q |
| General Services Producer Price Index (SPPI) for France | Eurostat | Price | Quarterly | q-1 / q |

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| General Services Producer Price Index (SPPI) for Greece | Eurostat | Price | Quarterly | q-1 / q-1 |
| General Services Producer Price Index (SPPI) for Hungary | Eurostat | Price | Quarterly | q-1 / q-1 |
| General Services Producer Price Index (SPPI) for Ireland | Eurostat | Price | Quarterly | q-1 / q |
| General Services Producer Price Index (SPPI) for Italy | Eurostat | Price | Quarterly | q-1 / q-1 |
| General Services Producer Price Index (SPPI) for Latvia | Eurostat | Price | Quarterly | q-1 / q-1 |
| General Services Producer Price Index (SPPI) for Lithuania | Eurostat | Price | Quarterly | q-1 / q |
| General Services Producer Price Index (SPPI) for Luxembourg | Eurostat | Price | Quarterly | q-1 / q-1 |
| General Services Producer Price Index (SPPI) for Malta | Eurostat | Price | Quarterly | q-1 / q-1 |
| General Services Producer Price Index (SPPI) for Netherlands | Eurostat | Price | Quarterly | q-1 / q |
| General Services Producer Price Index (SPPI) for Poland | Eurostat | Price | Quarterly | q-1 / q |
| General Services Producer Price Index (SPPI) for Romania | Eurostat | Price | Quarterly | q-1 / q-1 |
| General Services Producer Price Index (SPPI) for Sweden | Eurostat | Price | Quarterly | q-1 / q |
| CIF-FOB Adjustment Non-resident | Own compilation | Volume | Quarterly | q / q |

Notes:

BdE: Banco de España
INEGI: Instituto Nacional de Estadística y Geografía de México
OECD: Organisation for Economic Co-operation and Development

For some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors.

### 5.5.5 Exports of services. Expenditure of non-resident on the economic territory

The current-price value of *expenditure of non-resident on the economic territory* corresponds to that recorded in the *external account of goods and services* of the Rest of the World Account within the *Quarterly Non-Financial Accounts of the Institutional Sectors*.

There are three methodological differences between *expenditure by non-resident on the economic territory* and *travel credits* in the *Balance of Payments*, which are detailed below:

- Expenditure on transport, accommodation and subsistence by tourists travelling for business purposes is treated as intermediate consumption in the National Accounts and is recorded under exports of services (excluding expenditure by non-resident households in the economic territory). In the Balance of Payments, it is included under travel credits.
- Expenditure on package holidays purchased through intermediaries is included under *travel credits* in the Balance of Payments, whereas in the National Accounts it is recorded as intermediate consumption under *exports of services* (excluding *expenditure by non-resident households in the economic territory*).-

Personal expenditure by diplomats and related staff is recorded as *expenditure by non-resident households in the economic territory* in the National Accounts, while in the Balance of Payments it is classified as *government goods and services* within *other services credits*.

National Accounts produces its own estimates for these concepts, using EGATUR as the main source of information.

For the flash estimates, the first two months of travel credits from the Balance of Payments are used. From this figure, the estimated expenditure on transport, accommodation and subsistence by business tourists and the estimated expenditure on package holidays purchased through intermediaries are subtracted, and the estimated personal expenditure of diplomats and related staff is added. In this way, expenditure by non-resident households in the economic territory is obtained for the first two months of the quarter. The third month is estimated using early data from EGATUR.

The indicators used to calculate the price estimates are detailed in the following table.

**Aggregate:** **Exports of services. Expenditure of non-resident households in the economic territory**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| CPI for Food and non-alcoholic beverages (group 01 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Alcoholic beverages and tobacco (group 02 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Clothing and footwear (group 03 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Housing, water, electricity, gas and other fuels (group 04 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Furnishings, household equipment and routine household maintenance (group 05 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Health (group 06 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Transport (group 07 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Communications (group 08 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Recreation and culture (group 09 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Education (group 10 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Restaurants and hotels (group 11 of ECOICOP) | INE | Price | Monthly | m / m+2 |
| CPI for Miscellaneous goods and services (group 12 of ECOICOP) | INE | Price | Monthly | m / m+2 |

For some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors.

### 5.5.6 Imports of services. Expenditure of resident households in the rest of the world

The current-price value *of expenditure by resident households in the rest of the world* corresponds to that recorded in the *external account of goods and services* of the Rest of the World Account within the *Quarterly Non-Financial Accounts of the Institutional Sectors*.

There are three methodological differences between *expenditure by resident households in the rest of the world* and travel debits in the *Balance of Payments*, which are detailed below:

- Expenditure on transport, accommodation and subsistence by tourists travelling for business purposes is treated as intermediate consumption in the National Accounts and is recorded under *imports of services* (excluding *expenditure by resident households in the rest of the world*). In the Balance of Payments, it is included under *travel debits*.
- Expenditure on package holidays purchased through intermediaries is included under *travel debits* in the Balance of Payments, whereas in the National Accounts it is recorded as intermediate consumption under *imports of services* (excluding *expenditure by resident households in the rest of the world*).Personal expenditure by diplomats and related staff is recorded as *expenditure by resident households in the rest of the world* in the National Accounts, while in the Balance of Payments it is classified as *government goods and services* within *other services debits*.

National Accounts produces its own estimates for these concepts, using the *Resident Tourism Survey* as the main source of information.

For the flash estimates, the first three months of *travel debits* from the *Balance of Payments* are used. From this figure, the estimated expenditure on transport, accommodation and subsistence by business tourists and the estimated expenditure on package holidays purchased through intermediaries are subtracted, and the estimated personal expenditure of diplomats and related staff is added. In this way*, expenditure by resident households in the rest of the world* is obtained for the reference quarter.

The indicators used to calculate the price estimates are detailed in the following table.

**Aggregate:** **Imports of services. Expenditure of resident households in the rest of the world**

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| Exchange rate of Australian Dollars per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Brazilian Reais per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Canadian Dollars per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Chilean Pesos per Euro | BdE | Price | Monthly | m-1 / m+1 |
| Exchange rate of Yuans per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of US Dollars per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Pound Sterlings per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Indian Rupees per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Japanese Yens per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Mexican Pesos per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Norwegian Krones per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Swiss Francs per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Turkish Liras per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Icelandic Krones per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Indonesian Rupiahs per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of New Israeli Sheqalim per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of South Korean Wons per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of New Zealand Dollars per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of South African Rands per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Moroccan Dirhams per Euro | BdE | Price | Monthly | m-2 / m |
| Exchange rate of Bulgarian Levs per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Czech Krones per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Danish Krones per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Hungarian Forints per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Polish Zlotys per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Romanian Leis per Euro | BdE | Price | Monthly | m / m+2 |
| Exchange rate of Swedish Krones per Euro | BdE | Price | Monthly | m / m+2 |
| General CPI for Brazil | OECD | Price | Monthly | m / m+2 |
| General CPI for Canada | OECD | Price | Monthly | m / m+2 |
| General CPI for Chile | OECD | Price | Monthly | m / m+2 |
| General CPI for China | OECD | Price | Monthly | m / m+2 |
| General CPI for United States of America | OECD | Price | Monthly | m / m+2 |
| General CPI for United Kingdom | OECD | Price | Monthly | m / m+2 |
| General CPI for India | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for Japan | OECD | Price | Monthly | m-1 / m+1 |

| Base indicator | Source | Indicator type | Frequency | Availability QNA flash estimate / QNA |
|---|---|---|---|---|
| General CPI for Mexico | INEGI | Price | Monthly | m-1 / m+1 |
| General CPI for Norway | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for Switzerland | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for Turkey | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for Iceland | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for Indonesia | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for Israel | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for Korea | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for New Zealand | OECD | Price | Monthly | m-1 / m+1 |
| General CPI for South Africa | OECD | Price | Monthly | m-2 / m |
| General CPI for Morocco | Haut-Commissariat au Plan | Price | Monthly | m / m+2 |
| General CPI for Andorra | Departament d'Estadística del Govern d'Andorra | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Portugal | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Germany | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Austria | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Belgium | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Bulgaria | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Czech Republic | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Cyprus | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Croatia | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Denmark | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Slovakia | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Slovenia | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Estonia | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Finland | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for France | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Greece | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Hungary | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Ireland | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Italy | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Latvia | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Lithuania | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Luxembourg | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Malta | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Netherlands | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Poland | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Romania | Eurostat | Price | Monthly | m / m+2 |
| General Harmonised Consumer Price Index (HCPI) for Sweden | Eurostat | Price | Monthly | m / m+2 |

Notes:
BdE: Banco de España
INEGI: Instituto Nacional de Estadística y Geografía de México
OECD: Organisation for Economic Co-operation and Development

For some recent periods in which the underlying source data are either not yet available or are considered anomalous, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors.

## 6. GDP and its components: the income approach

### 6.1 Compensation of employees

An estimate of the *compensation of employees* is offered and its breakdown into *wages and salaries* and *employers' social contributions* at current prices of the total economy, disaggregated by activity branches, according to the 2009 National Classification of Economic Activities (NACE REV. 2):

- Agriculture, forestry and fishing (Section A, NACE REV. 2)
- Manufacturing, mining and quarrying and other industry (Sections B-C-D-E, NACE REV. 2)
    - Of which: manufactured products (Section C, NACE REV. 2)
- Construction (Section F, NACE REV. 2)
- Services (Sections G to T, NACE REV. 2)
    - Services. Wholesale and retail trade services; Transportation and storage; Accommodation and food services (Sections G-H-I, NACE REV. 2)
    - Services. Information and communication (Section J, NACE REV. 2)
    - Services. Financial and insurance activities (Section K, NACE REV. 2)
    - Services. Real estate activities (Section L, NACE REV. 2)
    - Services. Professional, scientific and technical services; Administrative and support services (Sections M-N, NACE REV. 2)
    - Services. Public administration and defence services, compulsory social security services; Education services; Human health and social work services (Sections O-P-Q, NACE REV. 2)
    - Services. Arts, entertainment and recreation services; Other services; Private households as employers (Sections R-T, NACE REV. 2)

In each of them, except in the case of Sections A, K and O–Q of NACE REV. 2, the synthetic indicator of average compensation per job (in national accounts terms) for employees is derived from the *Quarterly Labour Cost Survey*, previously adjusted for furloughed workers (ERTE), in order to align it with the national accounts concept of job defined in ESA 2010 and to ensure the necessary consistency with the definitions and with its transformation into compensation of employees. Once the synthetic indicator of employee compensation has been constructed for each activity branch considered, an extrapolation is performed using the compensation of employees for the same quarter of the previous year for each of them.

In the case of Section A, the synthetic indicator of average compensation per job (in national accounts terms) for employees is based on the evolution of the *average daily wage* derived from the *Agricultural Wage and Earnings Index Statistics* of the Ministry of Agriculture, Fisheries and Food. For recent periods in which this information is not available, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors.
In the case of Sections O, P and Q, the synthetic indicator is a weighted average of the average compensation in the General Government sector and that derived from the

*Quarterly Labour Cost Survey* for the corresponding branch. The weights are determined based on the share of compensation of employees in General Government in the total for that activity in the reference year or in the previous year (for the quarters of the current year).

In the case of section K, the results of the *Quarterly Non-Financial Accounts of the Institutional Sectors* (QNFIS) for each of the subsectors of the *Financial Institutions* sector.

For the flash estimate of a quarter *t*, the average compensation per employee job in each activity for that quarter is obtained using the estimated evolution of the *average gross earnings* in each activity according to the *Sales, Employment and Salaries of Large Companies* statistics for the quarter (based on the results available for the first two months and a forecast for the third month), together with a forecast of the aggregate series available up to the previous quarter. These forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors. The *compensation of employees* for each activity results from the product of the average compensation estimated by the total number of salaried jobs in it.

### 6.1.1 Wages and salaries and employers' social contributions

Except in the case of sections A, K and O-P-Q of NACE REV. 2, those derived from the *Quarterly Labour Cost Survey* are used as a synthetic indicator of average wages and salaries per job position (in terms of national accounting).

In the case of Section A, the synthetic indicator of average wages and salaries per employee job (in national accounts terms) is based on the evolution of the *average daily wage* derived from the *Agricultural Wage and Earnings Index Statistics* of the Ministry of Agriculture, Fisheries and Food. For recent periods in which this information is not available, forecasts are produced using various techniques (ETS, TBATS, NNETAR, THETAM, STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors.
In the case of Sections O–Q, the synthetic indicator is a weighted average of the *average wages and salaries* in General Government and those derived from the *Quarterly Labour Cost Survey* for the corresponding branch. The weights are determined on the basis of the share of *wages and salaries* in General Government within the total for that activity in the reference year, or in the previous year in the case of the quarters of the current year.
In the case of section K, the results of the *Quarterly Non-Financial Accounts of the Institutional Sectors* (QNFIS) for each of the subsectors of the *Financial Institutions* sector.

The *employers' social contributions* in each activity result from the difference between the *compensation of the employees* and the estimated *wages and salaries*.

For the flash estimates, *wages and salaries* in each activity for the quarter are estimated on the basis of a forecast of their share in total *compensation of employees* in each activity branch. *Employers' social contributions* are then obtained as the difference between total compensation and the estimated *wages and salaries* in each activity. This forecast is produced using various techniques (ETS, TBATS, NNETAR, THETAM,

STLM, as well as ARIMA modelling). The selection of the most appropriate forecast is based on the evaluation of several error measures (MAE, RMSE, MAPE) and on a scoring function that ranks the forecasts by combining these prediction errors.

### 6.2 Taxes less subsidies on production and imports

Taxes less subsidies on production and imports at current prices are made up of taxes minus subsidies on products plus other taxes minus subsidies on production.

In both cases, the QNAS integrates the results of the *Quarterly Non-Financial Accounts of General Government*, compiled by the IGAE. The estimates of *subsidies on products* (D.31) and *other subsidies on production* (D.39) are supplemented with the value of the subsidies received from the EU under the European Agricultural Guarantee Fund (EAGF), obtained from the information published by the Spanish Agricultural Guarantee Fund (FEGA)[47].

On the date of publication of the preliminary results, the quarterly results for the entire institutional sector of the General Government (S.13) are not yet available, although the monthly accounts of the State are available (part of the institutional subsector S. 1311 Central Government, excluding Social Security funds) for the three months of the reference quarter and for the first two months of Central Government, excluding social security funds (S.1311), Regional Government, excluding funds from social security (S.1312) and Social Security Funds (S.1314), in addition to information on monthly tax collection from the Tax Agency (AEAT). With all the available information, an estimate is made of the other taxes on production and of the other subsidies on production to be collected / paid by the General Government for the quarter as a whole from an econometric modelling of its components.

### 6.3 Gross operating surplus and gross mixed income

The aggregate of Gross Operating Surplus and Gross Mixed Income of the national economy is obtained as the difference between the Gross Domestic Product at current prices and the sum of the remuneration of employees and taxes less subsidies on production estimated.

[47] Subsidies on products include compensatory payments for arable crops, production incentives, premiums for livestock, sheep and goats, export refunds, and all subsidies in which agricultural producers receive the difference between average market prices and guaranteed prices. The remaining EAGF flows that are not classified as capital transfers (such as incentives for land set-aside, incentives for agricultural production in less-favoured and/or mountainous areas, etc.), as well as other remaining flows, are recorded as other subsidies on production.

## 7. Population and employment

### 7.1 Population

GDP and per-capita income for each quarter are calculated using the quarterly average resident population. The quarterly population series is fully consistent with INE's official annual population figures and intercensal revisions. For quarterly estimates, the Continuous Population Statistics are used as the basic source, complemented with administrative registers when required to ensure consistency with the annual series.

### 7.2 Employment

Employment is estimated in terms of persons employed, jobs, hours actually worked and full-time equivalent (FTE) jobs. Results are disseminated as original series and as series adjusted for seasonal and calendar effects. The breakdown by industry follows NACE REV. 2:

- Agriculture, forestry and fishing (Section A, NACE REV. 2)
- Manufacturing, mining and quarrying and other industry (Sections B-C-D-E, NACE REV. 2)
    - Of which: manufactured products (Section C, NACE REV. 2)
- Construction (Section F, NACE REV. 2)
- Services (Sections G to T, NACE REV. 2)
    - Services. Wholesale and retail trade services; Transportation and storage; Accommodation and food services (Sections G-H-I, NACE REV. 2)
    - Services. Information and communication (Section J, NACE REV. 2)
    - Services. Financial and insurance activities (Section K, NACE REV. 2)
    - Services. Real estate activities (Section L, NACE REV. 2)
    - Services. Professional, scientific and technical services; Administrative and support services (Sections M-N, NACE REV. 2)
    - Services. Public administration and defence services, compulsory social security services; Education services; Human health and social work services (Sections O-P-Q, NACE REV. 2)
    - Services. Arts, entertainment and recreation services; Other services; Private households as employers (Sections R-T, NACE REV. 2)

Except for sections O–Q of NACE REV. 2, the synthetic indicator used in the estimation is obtained, for each variable, from an exploitation of the microdata of the *Labour Force Survey* (EPA), compiled by INE. The processing of these microdata adapts the information they contain to the concepts and definitions established in ESA 2010 regarding the measurement of employment. On this basis, the variables corresponding to persons, jobs and hours are estimated, both for total employment and for employees and self-employed. Once these data have been obtained and consolidated, the number of full-time equivalent (FTE) jobs is derived in accordance with the definition established for this variable.

For sections O–Q, the synthetic indicator is a weighted average of the estimate of employment developments prepared for General Government as a whole and the estimate derived from the Labour Force Survey (excluding results relating to public-sector employees). The weights are determined taking into account the share of General Government employment, for each variable, in the total of the corresponding activity in the reference year (or in the previous year in the case of quarters of the current year).

## 8. Flash estimate of the Quarterly National Accounts of Spain

The general compilation procedure for the flash estimate of the results for quarter *t* at *t+30 days* is, in overall terms, the same as that used for the update at *t+90 days*, except for the differences in the information sources employed, which have been mentioned for each accounting aggregate in the preceding sections.