TURKISH STATISTICAL INSTITUTE

# Studies undertaken within the Scope of "Main Revision" in National Accounts

## Explanatory Note

**TurkStat Directorate of National Accounts Department**

**01.09.2025**

This document presents the calculations underlying the revised Gross Domestic Product (GDP) series prepared within the scope of the harmonization efforts with the European System of National Accounts. It also covers the use of existing and new data sources, the implications of these revisions for the national accounts system, and the studies conducted to extend the GDP series traced back to 1995.

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## Abbreviations

AB – European Union

BOP – Balance of Payments Statistics

BRSA – Banking Regulation and Supervision Agency

CBRT – Central Bank of the Republic of Türkiye

COICOP – Classification of Individual Consumption According to Purpose

CPA 2.1 – Statistical Classification of Products by Activity in the European Economic Community

CPM – Capital Markets Board

ESA – European System of Accounts

EUROSTAT – Statistical Office of the European Union

FTS – Foreign Trade Statistics

GFCF – Gross Fixed Capital Formation

GDP – Gross Domestic Product

GT – General Trade System

HH – Household

ILO – International Labour Organization

IPA – Instrument for Pre-Accession Assistance

ITS – International Trade in Services

ITSS – International Trade in Services Statistics

ITSSS – International Trade in Services Statistics Survey

NACE Rev.2 – Statistical Classification of Economic Activities in the European Community, Rev.2

NPISH – Non-Profit Institutions Serving Households

OECD – Organisation for Economic Co-operation and Development

SSI – Social Security Institution

SNA – System of National Accounts

SUT – Supply and Use Table

TurkStat – Turkish Statistical Institute

UN – United Nations

UNESCAP – United Nations Economic and Social Commission for Asia and the Pacific

VAT – Value Added Tax

# INTRODUCTION

The National Accounts System is a system created to measure the economic and financial activities of a country, its components and the relations between them within a certain period. This system is a set of accounts that show the value added created by production, the consumption expenditure of government and households, its investments, its economic and financial relations with other countries, and the income generated by those engaged in production in a meaningful and consistent manner. The national accounts system is at the centre of macroeconomic statistics and allows to analyse economies, is not only dependent on a single data source, but also is a system in which both administrative records and all titles included in the statistics system are integrated. In Türkiye, estimations related to the National Accounts System are in line with SNA and ESA guidelines.



The System of National Accounts (SNA) was initially developed by the United Nations in 1953 and has been revised in 1968, 1993, and 2008 in order to adapt to the evolving structure of national and international economies.

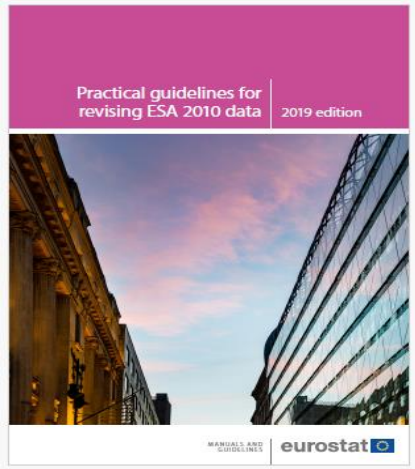
The European System of Accounts (ESA), which ensures consistency with the System of National Accounts (SNA) while providing a framework more specifically oriented towards the requirements of the European Union Member States in terms of presentation and tabulation, was first developed by Eurostat in 1975, and was later revised in 1979, 1995, and 2010.

Another important aspect of the System of National Accounts (SNA) is the periodic updating of measurement practices, necessitated by the dynamic nature of the economy. In line with adjustments made in estimation methods and data sources, the need arises for the revision of estimates. All countries undertake revisions of the statistics they produce at regular intervals, essentially for two main reasons.

**Routine revisions** are carried out by reflecting data that become available subsequently or are finalized after initial estimates. In all countries, estimates of GDP published shortly after the reference period are regularly updated as new data are incorporated over time or as some provisional data used in the initial calculations are confirmed.

**Main revisions** refer to updates resulting from changes in the base year, classifications, definitions and coverage, as well as modifications in methodology, implementation, survey design, source data, or legal regulations.

Main revisions of the System of National Accounts (SNA), which are conducted globally every five to seven years, are carried out in response to new conditions arising in economic and social domains and involve changes in the scope or methods of calculation. The most recent standards guiding these revisions are the System of National Accounts (2008 SNA) and the European System of Accounts (ESA 2010). All countries consider such main revisions as an opportunity not only to incorporate methodological changes into the system but also to integrate new or updated data sources, thereby enabling statistical improvements.




Within the framework of the 'Harmonised European Revision Policy[1] (HERP)", a benchmark revision based on harmonisation is conducted in the System of National Accounts (SNA) every five years. In this context, the European Union Member States carried out a harmonisation-based benchmark revision of the SNA in 2024. The primary objective of the 2024 benchmark revision was to improve the results of the national accounts by incorporating new data sources, a new classification of household final consumption expenditure, and updated calculation methods.

Following the European Union, a revision of the Turkish System of National Accounts is planned for 2025. The revision plan was publicly announced in both Turkish and English on 02/02/2024 via the Turkish Statistical Institute's (TurkStat) official website (www.tuik.gov.tr).

In this context, the document has been prepared to include not only explanations of revisions but also fundamental information on the national accounts, the data sources, and the methodologies developed.

[1] Revision policies in the System of National Accounts (SNA) are outlined in the handbook "Practical Guidelines for Revising ESA-2010 Data", which is also cited in the references.

# Chapter 1 Methods of GDP Calculation

The international guidelines applied in the calculation of GDP are ESA 2010 and SNA 2008. The scope of GDP calculations covers the entire territory of Türkiye. Within the Turkish Statistical Institute's (TurkStat) System of National Accounts, GDP is estimated quarterly and annually using the production, expenditure, and income approaches, and is published after balancing through supply and use tables.

Calculations under the production and expenditure approaches are carried out at current prices as well as in chain-linked volume indices. GDP estimates based on the income approach are calculated and published at current prices.

## 1.1. GDP by the Production Approach

Under the production approach, gross value added (GVA) is obtained by subtracting the total value of inputs used in the production of all goods and services from the total production value of all goods and services generated by resident producer units in an economy during a given period. Gross value added is calculated at the level of economic activity. By adding taxes on products and subtracting subsidies, the value of GDP is obtained according to the production approach.

The main classification used in GDP calculations under the production approach is the Statistical Classification of Economic Activities in the European Community, NACE Rev.2. Units and their corresponding classification codes employed in GDP calculations are drawn from the TurkStat Business Register System.

Under the production approach, production values are estimated for market production, non-market production, and own-account production for own final use.

***Market production*** comprises production carried out with the intention of being sold at economically significant prices in the market. Market production includes the following items:

a) Goods and services sold at economically significant prices,
b) Bartered goods and services,
c) Goods and services used for payments in kind,
d) Goods provided by one unit to another either as intermediate consumption or for final use,
e) Finished goods or goods added to inventories whose production is still ongoing (including naturally grown animals and vegetables, and incomplete structures for which the purchaser is unknown).

***Non-market production*** covers production supplied to other units either free of charge or at economically insignificant prices. The production accounts of S.13 General Government and S.15 Non-Profit Institutions Serving Households (NPISHs) constitute non-market production accounts.

A cost-based approach is applied for non-market production, whereby the total value of all expenditure items is summed to obtain the production value. It is assumed that the operating surplus is zero.

In the case of own account production, the Annual Industrial Products Survey (PRODCOM) is used for S.11 Non-Financial Corporations. Goods produced by enterprises for their own use are valued at market prices and included in production. An example is the copper ore extracted by an enterprise for its own copper wire production.

Within the household sector, production for own final consumption has been calculated for selected agricultural and animal products.

The production boundary, as defined in ESA, encompasses the production of individual and collective goods and services, the production of goods for own final use, the value of production derived from the use of dwellings, and domestic and personal services produced through the employment of paid domestic staff. In addition, it covers production activities carried out without reporting to the fiscal authorities.

Due to the structure of the system, services produced and consumed within the same household are not included in the system. To address this, household satellite accounts have been developed, enabling detailed analyses of goods and services within this category.

The fundamental principle of GDP calculation using the production approach is to compile production, input (intermediate consumption), and value added accounts according to institutional sectors and the respective economic activities of each sector. In this manner, consistency is ensured with the accounts of institutional sectors and the general government. Consequently, the stages of GDP calculation using the production approach are presented according to institutional sectors.

**S.11 Non-Financial Corporations**

Non-financial corporations are institutional units with independent legal personality that operate as market producers. Their primary activities consist of the production of goods and non-financial services. This sector includes private enterprises, publicly owned commercial entities, factories, retail stores, private schools, and private hospitals. Non-financial corporations constitute the institutional sector that generates the largest share of value added within the total economy.
Publicly owned non-financial corporations[2] that engage in market production are also included under S.11.

[2] For the classification of the **general government sector**, see [https://biruni.tuik.gov.tr/DIESS/DosyaListeleAction.do?turId=1&tanimlayan_id=1577&adi=Kamu%20Sekt%C3%B6r%C3%BC%20S%C4%B1n%C4%B1flamas%C4%B1,%202025/1].

**Table 1 Coverage of Annual Industrial and Service Statistics**

| Section | Definiton |
|---|---|
| B | Mining and Quarrying |
| C | Manufacturing |
| D | Electricity, Gas, Steam and Air Conditioning Supply |
| E | Water Supply; Sewerage, Waste Management and Remediation Activities |
| F | Construction |
| G | Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles |
| I | Accommodation and Food Service Activitie |
| H | Transportation and Storage |
| J | Information and Communication |
| L | Real Estate Activities |
| M | Professional, Scientific and Technical Activities |
| N | Administrative and Support Service Activities |
| P | Education |
| Q | Human Health and Social Work Activities |
| R | Arts, Entertainment, Recreation and Sports |
| S | Other Service Activities |

The primary data source for the Non-Financial Corporations (S.11) account is the Annual Industrial and Service Statistics. These statistics are compiled using financial statements obtained from the Revenue Administration. According to the NACE Rev.2 classification, the following sections are not covered within the scope of the Annual Industrial and Service Statistics: A – Agriculture, Forestry and Fishing, K – Financial and Insurance Activities, O – Public Administration and Defence; Compulsory Social Security, T – Activities of Households as Employers, U – Activities of Extraterritorial Organisations and Bodies.

## S.12 Financial Corporations

Financial corporations are institutional units with independent legal personality whose primary activity is the production of financial intermediation and financial services. This sector includes banks, insurance companies, investment and pension funds, brokerage firms, and financial leasing companies.

The sector corresponds to Section K – Financial and Insurance Activities in the NACE Rev.2 classification, and comprises the following subsections:

64 – Financial Service Activities, except Insurance and Pension Funds

65 – Insurance, Reinsurance, and Pension Funds, except Compulsory Social Security

66 – Activities Auxiliary to Financial Services and Insurance Activities

For NACE Rev.2 64, the Central Bank of the Republic of Türkiye (CBRT) annual detailed profit and loss statement is used for all ESA transactions of the Central Bank. For financial institutions such as banks, leasing companies, factoring companies, and financial holding

companies, the Banking Regulation and Supervision Agency (BRSA) registry system is employed.

For NACE Rev.2 65, data from the Insurance and Private Pension Regulation and Supervision Authority and Insurance of Agriculture are used. (With updates on the public sector scope of Natural Disaster Insurance Institution, certain activities have been reclassified under the general government and retrospectively removed from the financial corporations sector.)

For NACE Rev.2 66, survey data conducted by BRSA, Capital Markets Board of Türkiye (CMB), and TurkStat for financial intermediaries are used.

**S.13 General Government Accounts**

The general government sector consists of central government, local administrations, and social security institutions. This sector not only performs the regulatory and supervisory functions of public authority but also ensures the redistribution of income and wealth. In addition, it provides non-market goods and services to individuals and society.

A significant innovation introduced during the main revision conducted as part of the transition to ESA 2010 is the establishment of independent annual and quarterly estimates. Within this framework, calculations for the general government sector have been methodologically and data-wise improved, and harmonisation between annual and quarterly accounts has been implemented.

Unlike the annual general government account, the quarterly general government account has a mixed data structure due to the provisional nature of the underlying data. For central government budgetary institutions, data are recorded on an accrual basis, as in the annual account, whereas for other central government units, local administrations, and social security institutions, data are cash-based. Differences arising from the cash-accrual gap are reconciled at year-end by aligning quarterly estimates with the annual estimate.

Within the scope of the general government accounts, data obtained from the Ministry of Treasury and Finance, Directorate General of Accounting, and the Revenue Administration are used to produce the main components table of general government and the taxes and social contributions table.

***Main Components Table of General Government***: This table presents the government's market and non-market output, intermediate consumption, value added, wages and salaries paid, consumption of fixed capital, and other related items.

***Taxes and Social Contributions Table***: This table lists all taxes and social contributions according to the national classification in detail and presents their values according to the sub-sectors responsible for collecting them.

**S.14 Household Sector**

A household consists of individuals living together in a single dwelling or part of a dwelling, who pool their income and expenditures and participate jointly in household management, regardless of whether they are related. Households are not only consumers but also producers engaging in economic activities. In this context, the household sector encompasses both

consuming individuals and entrepreneurial individuals producing goods and non-financial services for the market. Households may also produce goods and services for their own final use. The primary functions of this sector include providing labour supply, conducting entrepreneurial activities, and generating market output.

Within the Business Register System, enterprise data obtained from the Revenue Administration are classified according to specific criteria as either S.11 Non-Financial Corporations or S.14 Households. The calculations for S.14 are carried out within this framework.

***Households as Producers:*** Production within the household sector encompasses the output of unincorporated enterprises owned and controlled by household members, either individually or jointly with others. When household members work for corporations or the government, they are not considered part of the household sector. The production activity of households may cover all types of economic activity, including agriculture, retail trade, and services. Households may operate as employers or work individually, such as street vendors or shoeshiners without their own building or capital.

Within the production account of the household sector, the informal sector holds significant importance. All legal production that households deliberately conceal from public authorities—due to reasons such as avoiding taxes on income, value added, or other levies, social security contributions, statutory regulations, or administrative procedures—is included in the system as household sector production (N1). Over time, this share is expected to decrease as registration and compliance improve.

According to NACE Rev.2, the following activities contribute substantially to household sector production:

- *Section A* – Agriculture, Forestry and Fishing
- *Section T* – Activities of Households as Employers, particularly division 97: services of households as employers of domestic personnel
- *Section R* – Arts, Entertainment, Recreation and Sports, particularly division 93: sports, entertainment, and recreational activities

***Households Producing for Own Final Use:*** Households produce goods and services for their own final consumption. Imputed rent represents services produced by households for their own final use. Imputed rent is calculated based on the rental value that households would have to pay in the market for a dwelling with similar characteristics, including owner-occupied housing, staff accommodation, or other arrangements (e.g., relative's home).

As in other countries, imputed rent accounts for the largest share of production within the household sector. Additionally, products produced by households for their own use, such as agricultural products (milk, yogurt, fruits, etc.), and major repairs and additions performed on their own dwellings are included in the system as part of the informal sector adjustment.

## S.15 Non-Profit Institutions Serving Households (NPISHs)

Non-profit institutions serving households (NPISHs) are organizations with legal or social status that operate without profit motives. Examples include associations, foundations, trade unions, professional chambers and exchanges, political parties, and religious organizations. These institutions provide goods and services free of charge or at economically insignificant prices to their members or the general public, and any income generated cannot be distributed to founders or managers.

Most non-profit institutions act as non-market producers, providing goods or services to other institutional units at economically insignificant prices or free of charge. NPISHs are primarily legal entities engaged in non-market production for households, and their main resources are voluntary contributions from households.

The scope of the NPISH sector includes trade unions, professional chambers and exchanges, political parties, sports federations, associations, and foundations.

Data sources for trade unions:

- Intermediate consumption (P.2): survey results conducted by the National Accounts,
- Wages and salaries (D.1): Social Security Institution (SGK) data,
- Member contributions: estimated using data on the number of trade union members (workers and civil servants) published by the Ministry of Labour and Social Security, multiplied by the average annual member contributions to obtain current transfers.

Data sources for political parties:

- Transfers to political parties from public financial statistics,
- Employment data registered in public financial statistics.

Data sources for federations:

- Federation income statements,
- Initial appropriations and advertising revenues provided by the General Directorate of Sports.

Data sources for foundations and associations:

- General Directorate of Foundations: income and expenditure statements for foundations (administrative records),
- Directorate of Associations, Ministry of Interior: income and expenditure statements for associations (administrative records).

When classifying data for foundations, Social Assistance and Solidarity Foundations, which have been operating under the Ministry of Family and Social Policies since 2011, and Foundation Funds for Assistance and Solidarity, established for institutional assistance and solidarity purposes, are separated. Foundation Funds for Assistance and Solidarity are classified

under the S.12 Financial Corporations sector, whereas other foundations are classified under S.15 NPISHs.

Income and expenditure administrative records (income statements and balance sheets) obtained from the Directorate of Associations, Ministry of Interior, are used to estimate NPISH accounts by institutional sector and activity breakdown.

### S.2 Rest of the World

The Rest of the World (RoW) sector consists of all non-resident institutional units that engage in economic transactions or other economic relationships with resident units. Although it does not constitute a traditional sector in the sense of requiring a full set of accounts, the Rest of the World is defined as a sector under ESA-2010.

Rest of the World accounts are statistical tables that systematically summarize the transactions conducted between an economy and the external world during a specific period. These tables cover all transactions between resident and non-resident institutional units, effectively serving as the accounting of a country's external economic relations.

Two key concepts are essential in this context: economy and residency. The concept of "economy" refers to a geographic area under the control of a government, while "residency" refers to natural persons residing in that economy for more than one year and institutional units engaged in economic activities within the economy. Additionally, the Rest of the World includes foreign establishments located within a country's geographical boundaries, such as embassies, consulates, military bases, and representations of international organizations.

The sequence of accounts for the rest of the world sector is as follows:

- the external account of goods and services
- the external account of primary and secondary incomes
- the external accumulation accounts

The first balancing item of the Rest of the World accounts is the balance of goods and services.

## 1.2. GDP by Expenditure Approach

GDP by the expenditure approach is composed of consumption and investment expenditures within an economy during a given period, as well as the net exports of goods and services. The main components of GDP by this approach are household final consumption, government final consumption, gross fixed capital formation, and net exports.

A portion of the goods and services produced in the economy is used as intermediate consumption in the production of other goods and services, while the remaining portion is directed to final consumption without further transformation. Goods destined for final consumption include durable and non-durable consumer goods as well as capital goods. A share of the produced goods and services is also exported. In the national accounts, final expenditure

estimates are evaluated at purchaser prices, thereby including taxes, transport, and trade margins.

The components of GDP by expenditure are estimated using both direct and indirect methods. Household final consumption expenditures are estimated indirectly through the commodity flow method for total machinery-equipment gross fixed capital formation and private sector construction investments. Direct estimation methods are applied for the remaining portion of household final consumption, government final consumption expenditures, public sector gross fixed capital formation, and exports and imports of goods and services.

Household final consumption expenditures, which constitute the largest share of GDP by expenditure, include all household spending on goods and services. The Classification of Individual Consumption by Purpose (COICOP) is used for household consumption expenditures. The commodity flow method serves as the main source for estimating household consumption.

*Government final consumption expenditures* comprise salaries and wages paid to personnel employed by the government, in-kind and social transfers, and expenditures on goods and services purchased from other sectors to provide government services. Data for government final consumption are derived from government budget accounts, with key figures obtained from the Ministry of Treasury and Finance.

*Gross fixed capital formation (GFCF)* measures the total value of acquisitions of fixed assets by producers, minus disposals, plus certain additions to non-produced assets arising from production activities. The largest part of GFCF consists of tangible fixed assets, which are subdivided into machinery-equipment and construction. Fixed assets are used in production for a period exceeding one year.

Data on exports and imports of goods are sourced from Turkish Statistical Institute (TurkStat) Foreign Trade Statistics, while data on service exports and imports are obtained from the Central Bank Balance of Payments statistics.

## 1.3. GDP by Income Approach

GDP by the income approach consists of the compensation of employees, net operating surplus and mixed income, and various taxes less subsidies collected by the government. It represents the total value of payments made to the production factors by producer units engaged in the production of goods and services in each economic activity. In other words, GDP by income approach is composed of net taxes on production and imports, consumption of fixed capital, compensation of employees, and operating surplus.

**Compensation of employees** is defined as the total remuneration paid in cash or in kind by an enterprise to its employees for work performed during the accounting period. This includes wages and salaries, as well as social security contributions paid by employers on behalf of employees.

**Consumption of fixed capital** refers to the decrease in the current value of fixed assets owned or used by a producer during the accounting period due to physical wear and tear, obsolescence, or accidental damage.

**Taxes on production and imports** comprise taxes on goods and services that are payable by producers when goods and services are produced, delivered, sold, or transferred, as well as import duties and taxes payable when goods cross the economic territory or services are delivered by non-resident units to resident units.

**Subsidies** are current transfers paid by government units, including non-resident government units, to enterprises, without a quid pro quo, based on the value of goods or services produced, sold, or imported, or according to the level or volume of production activities.

**Operating surplus and mixed income** are obtained by subtracting compensation of employees and taxes on production from net value added, and by adding subsidies. This component represents the share of capital within value added.

## Chapter 2 Supply-Use and Input-Output Tables

Supply-Use and Input-Output Tables provide a detailed analysis of the goods and services produced and used in an economy. The tables provide a balance between supply and demand with data compiled from different sources, ensuring consistency between definitions and classifications in order to present the total economy. In this respect, they are the best tool for calculating GDP.

SUTs enable a detailed analysis of the production process, the use of goods and services (products), and the income generated from this production. Their role in the system is closely linked with the goods and services account and the abridged accounts for industries. Together with the full set of institutional sector accounts, the SUTs and the subsequent symmetric input-output tables provide a framework for more detailed analysis by breaking down production and income generation accounts, and by serving as a bridge to the symmetric input-output framework.

SUTs also provide a framework for checking the consistency of statistics obtained from a wide variety of sources (industrial surveys, household consumption expenditure surveys, investment surveys, foreign trade statistics, etc.). By ensuring coherence of definitions and classifications used, the system acts as a coordinated framework for economic statistics. As an analytical tool, these data are integrated into macroeconomic models to analyse the relationship between final demand and industry output levels, serving multiple analytical purposes.

**The Supply Table** shows the supply of goods and services produced domestically and imported. The numbers in the diagonal cells show primary production activities carried out by industries, while the others show secondary production activities. The rows in the table show the supply of products.

In the supply table, domestic production is valued at basic prices, while imports are valued at CIF (Cost, Insurance, Freight) prices. Trade and transportation margins, defined as valuation matrices, and net taxes on products are used to convert the supply table from basic prices to the supply table at purchaser prices.

**The Use Table (at purchasers' prices)** presents the intermediate consumption of industries and the final uses of products, classified both by product groups and by categories of use. Final uses include household final consumption expenditure and government final consumption expenditure. In addition, the Use Table includes gross fixed capital formation, changes in inventories, and exports. It also includes the use of value-added components, including compensation of employees, taxes less subsidies on production, consumption of fixed capital, and net operating surplus.

The basic price table is obtained by extracting the valuation matrix (trade and transport margins and net tax matrices on products) from the use table at purchaser prices.

The Use Table is divided into a Use Table for domestic production and a Use Table for imports.

**The Use Table for domestic production** is derived from the total use table by subtracting the import use table. The table determines the input requirements of industries in terms of domestic intermediate products, imported intermediate products, and primary inputs (value added). It also shows the use of domestic products for intermediate and final uses.

**The Import Use Table** provides information on the use of imported goods for both intermediate consumption and final uses.

**Trade and Transport Margins** show payments made to the wholesale and retail trade sectors for goods purchased by intermediate consumption and final demand elements in the Use Table, and to the rail, road, and maritime transport sectors for the transportation of goods.

**Taxes Less Subsidies on Products:** Taxes on products are the taxes paid for each unit of goods or services that are produced, transacted, or imported. Subsidies on products are the subsidies paid for each unit of goods or services that are imported or produced. Taxes on products less subsidies on products show the net taxes on products.

**Input-Output Tables** are derived from the Supply and Use Tables. They are structured as a square symmetric matrix with equal numbers of rows and columns. Input-Output Tables can be obtained from the Supply and Use Tables using product, industry, or hybrid technology assumptions. Depending on the assumption used, the values derived from the Input-Output Tables may differ from those in the Supply and Use Tables. Input-Output Tables are used for structural analysis and planning of the economy, production analysis, demand structure analysis, price and cost analysis, analysis of imports and exports, investment analysis, productivity analysis, sensitivity analysis, and impact analysis.

**The Domestic Production Input-Output Table** is derived from the Use Table for domestic production at basic prices as a product-by-product input-output table based on the industry

technology assumption. It shows which industries and final demand components use the goods and services produced domestically.

**The Import Input-Output** Table shows which industries and final demand categories make use of imported goods and services.

**Prices Used in the Calculations:**

**Basic Price** refers to the amount receivable by producers from the production and sale of a unit of goods or services, obtained by deducting any taxes payable by the seller and adding any subsidies. It excludes any transportation charges separately invoiced by the producer.

**Producer's Price** can be defined as the amount receivable by the producer from the purchaser for a unit of goods or services, net of any invoiced value-added tax (VAT) or similar deductible taxes. It excludes any transportation charges separately invoiced by the producer.

**Purchaser's Price** refers to the actual amount paid by the buyer for the products, obtained by subtracting subsidies from taxes on products. However, it does not include deductible taxes such as VAT applied to products. It also excludes any transportation costs separately paid by the purchaser to take delivery at the required time and place.

# Chapter 3 Revision Studies on National Accounts System

## 3.1. Revisions on National Accounts System

The revision of quarterly GDP figures is a routine revision that takes place every year with the publication of the Independent Annual GDP Bulletin. These routine revisions, based on final annual data, ensure that changes in data sources are reflected annually, thereby preventing a significant impact on main revisions.

Main revisions, on the other hand, involve changes in methodology, classification, publication details, calculation improvements and corrections. The main revisions made to GDP series over the past twenty years are as follows:

i. The transition to ESA 95 was completed with the series published in 2008, and the base year was revised from 1987 to 1998. Both methodological developments and statistical changes were reflected in the system as part of this revision. This revision caused a change in the level of GDP.
ii. With the series published in 2014, the NACE Rev.2 classification used in EU member countries was adopted and the series was back-casted to 1998. This revision did not change the level of GDP.
iii. In 12 December 2016 implementation of ESA 2010 was achieved and the 1998-based series was revised with 2009 as the base year. The 2012 Supply and Use Tables were used as the basis for this revision. In this revision, Independent Annual GDP, GDP by Income Method, Regional GDP at the Provincial Level, Institutional Sector Accounts, and Government Accounts were published for the first time in accordance with the new

methodology, and quarterly national accounts began to be produced in line with the new system. This revision resulted in changes at the GDP level.

iv. On 31 August 2020, revisions were made to the National Accounts system due to revisions made in 2020 to Foreign Trade Statistics (transition from the Special Foreign Trade system to the General Foreign Trade system), International Trade in Services Statistics (ITSS) and Balance of Payments Statistics (BOP). The current series have been backcasted to 1998. This revision has caused a slight change in the level of GDP.

## 3.2. Studies on Revisions for National Accounts System 2023

Improvements to the national accounts system are ongoing. To this end, reports by international organisations such as Eurostat, the OECD, the United Nations and UNESCAP are being reviewed, and international developments are being monitored by attending seminars, conferences and meetings. Technical support has also been received from Eurostat through the IPA (Multi-beneficiary statistical cooperation) and NES (New Era in Statistics) projects, enhancing compliance with ESA 2010.

The results of the main revision studies are summarized in Table 2. At current prices, GDP for the year 2023 was revised upward by 2.06%. The impact of this revision on the chain-linked volume change of GDP corresponded to a decrease of 0.1 percentage points. In addition, Figure 1 presents the nominal GDP growth rates before and after the revision.

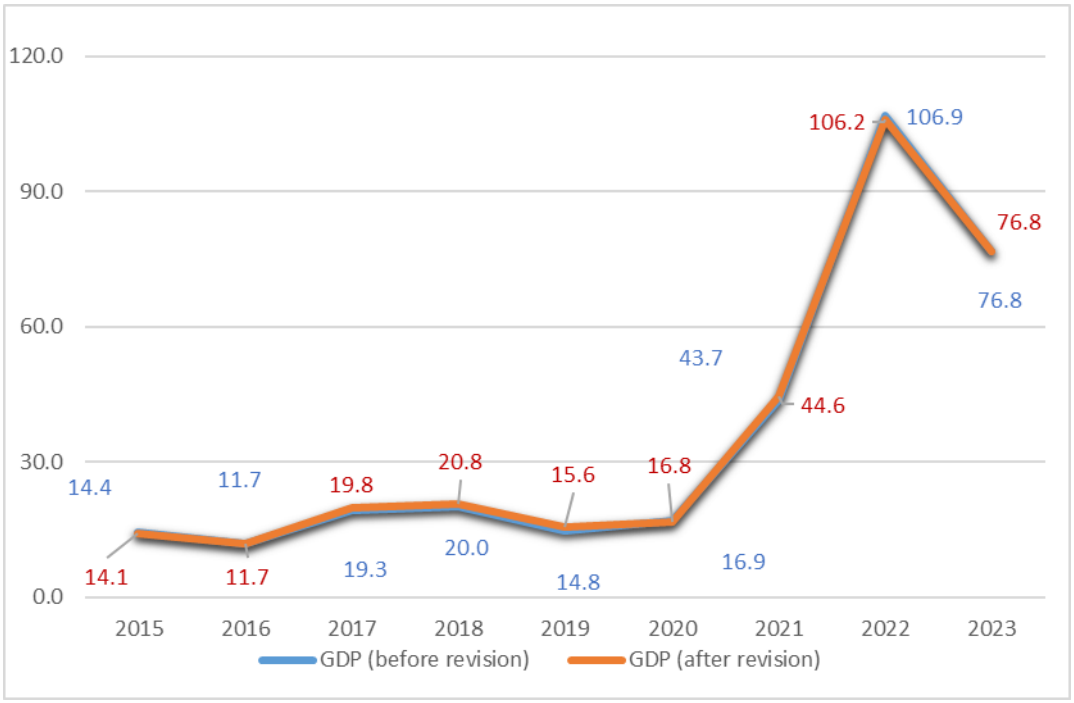



**Figure 1 Revisions in total GDP at current prices (2015-2023)**

**Table 2 Level Revision on total GDP (TRY)**

| | GDP in current prices (Million TRY) | | | | GDP Volume change(%) | |
|---|---|---|---|---|---|---|
| Year | Before Revision | After Revision | Revision Difference | Change in level (%) | Before Revision | After revision |
| 1998 | 71 945 | 71 969 | 24 | 0.03% | - | - |
| 1999 | 107 374 | 107 491 | 116 | 0.11% | -3.3 | -3.1 |
| 2000 | 171 494 | 171 778 | 284 | 0.17% | 6.9 | 7.0 |
| 2001 | 247 266 | 247 808 | 542 | 0.22% | -5.8 | -5.5 |
| 2002 | 362 110 | 362 907 | 797 | 0.22% | 6.4 | 6.4 |
| 2003 | 472 172 | 473 368 | 1 197 | 0.25% | 5.8 | 5.8 |
| 2004 | 582 853 | 584 694 | 1 841 | 0.32% | 9.8 | 9.9 |
| 2005 | 680 276 | 682 962 | 2 686 | 0.39% | 9.0 | 9.1 |
| 2006 | 795 757 | 799 460 | 3 702 | 0.47% | 6.9 | 7.1 |
| 2007 | 887 714 | 892 805 | 5 091 | 0.57% | 5.0 | 5.1 |
| 2008 | 1 002 756 | 1 009 221 | 6 464 | 0.64% | 0.8 | 0.9 |
| 2009 | 1 006 372 | 1 013 510 | 7 138 | 0.71% | -4.8 | -4.9 |
| 2010 | 1 167 664 | 1 176 048 | 8 383 | 0.72% | 8.4 | 8.5 |
| 2011 | 1 404 928 | 1 413 984 | 9 057 | 0.64% | 11.2 | 11.0 |
| 2012 | 1 581 479 | 1 590 049 | 8 570 | 0.54% | 4.8 | 4.8 |
| 2013 | 1 823 427 | 1 831 744 | 8 317 | 0.46% | 8.5 | 8.5 |
| 2014 | 2 054 898 | 2 062 358 | 7 460 | 0.36% | 4.9 | 4.6 |
| 2015 | 2 350 941 | 2 354 059 | 3 118 | 0.13% | 6.1 | 5.8 |
| 2016 | 2 626 560 | 2 629 988 | 3 428 | 0.13% | 3.3 | 3.3 |
| 2017 | 3 133 704 | 3 151 529 | 17 825 | 0.57% | 7.5 | 7.8 |
| 2018 | 3 761 166 | 3 806 479 | 45 314 | 1.20% | 3.0 | 3.5 |
| 2019 | 4 317 810 | 4 402 050 | 84 240 | 1.95% | 0.8 | 1.3 |
| 2020 | 5 048 568 | 5 141 711 | 93 143 | 1.84% | 1.9 | 1.8 |
| 2021 | 7 256 142 | 7 433 800 | 177 658 | 2.45% | 11.4 | 11.8 |
| 2022 | 15 011 776 | 15 325 857 | 314 082 | 2.09% | 5.5 | 5.4 |
| 2023 | 26 545 722 | 27 091 469 | 545 747 | 2.06% | 5.1 | 5.0 |

The work carried out within the scope of revision studies can be classified under three main categories: change in data sources, updates in international standards and improvements in estimation methods.

### 3.2.1. Changes in the data source

The more effective use of administrative records in the new GDP estimates based on 2023 Supply and Use Tables has constituted the most important stage of the revision work. In this context;

- Regarding businesses; Income statements, balance sheets and other declarations held by the Revenue Administration, e-invoice data,
- Regarding the financial sector: Balance sheet indicators, etc., from the Central Bank of the Republic of Türkiye, the Banking Regulation and Supervision Agency (BRSA), the Ministry of Treasury and Finance (MTF), and the Insurance and Private Pension Regulation and Supervision Authority (IPRSA),
- Relating to General Administration; Government Financial Statistics from Directorate General of Accounting,

- Relating to Associations and Foundations; relevant tables from the Directorate General of Associations of the Ministry of the Interior and the General Directorate of Foundations,
- Research by the Turkish Statistical Institute,
- 2021 Population and Housing Census, Address Based Population Registration System administrative records,
- Scope updates in the classification of the government and public sector
- Regarding the population under temporary protection; data from Ministry of Interior Presidency of Migration Management

such administrative records and new sources are used in the National Accounts System for the purpose of producing quarterly and annual indicators.

### 3.2.2. Updates in international standards

The classifications that constitute the foundation of the statistical information infrastructure have been revised, and these changes have been reflected in the system. In this context, the product classification, The Statistical Classification of Products by Activity (CPA), has been updated from CPA 2008 to CPA Rev. 2.1, and the Classification of Individual Consumption According to Purpose (COICOP) used for Household Final Consumption Expenditure has been revised from COICOP 1999 to COICOP 2018.

### 3.2.3. Improvements in estimation methods

The 2023 Supply and Use and Input-Output Tables, which form the basis of the main revision work, have been prepared. The preparation of these tables has enabled the economy to be observed with more indicators. In particular, many sub-account sets used in GDP estimations have been recalculated and detailed using new data, in parallel with the effective use of administrative records. In this context:

- Development of the calculation method for indirectly measured financial intermediation services (FISIM),
- Inclusion of own-account electricity generation and major repair and maintenance of own dwellings in the system,
- Development of the non-observed economy account,
- Developments in government accounts,
- Updates in goods and services import and export accounts ,
- Implementing the results of the 2021 Population and Housing Census in imputed and actual rent estimations,
- Development of accounts in the agricultural sector,
- Development of the income account

studies have been conducted.

### 3.3. Completed Studies within the Scope of the Main Revision

A detailed program and national implementation strategies were developed for the main revision task, and projects were conducted in collaboration with Eurostat, within the scope of these projects, regular technical collaboration was undertaken on key areas such as national accounts methodology, supply and use tables, institutional sector accounts, government accounts, and regional accounts. In addition to reviewing the existing accounts, the projects also facilitated the development of sub-accounts, including employment accounts, detailed supply and use tables, household final consumption accounts, economic balance accounts, and estimates of the non-observed economy.

The work carried out to harmonize classification frameworks, business registers and their coverage, surveys, administrative records sources, and information technology infrastructure has been completed.

**Within this context, the work related to the System of National Accounts presented in the press releases for the Second Quarter of 2025 Quarterly GDP, Annual GDP 2024, and Supply and Use Tables, Input-Output Tables 2023, are published together on 1 September 2025, is outlined below:**

#### 3.3.1. Supply and Use Tables, Input-Output Tables

With the effective use of administrative records, information from e-invoices has been processed to compile data on the input structure of enterprises. In parallel with improvements in administrative records, the new data sources obtained were used to prepare the 2023 Supply/Use and Input-Output Tables at the A-64 level.

The 2023 Supply and Use Tables have established a system in which all GDP estimations are balanced in accordance with the System of National Accounts (SNA 2008) and the European System of Accounts (ESA 2010). Statistical Classification of Economic Activities in the European Community (NACE Rev.2) for industrial groups and the Classification of Products by Activity (CPA Rev.2.1) for product groups are used at the tables.

Supply Table at Basic Prices, Including a Transformation into Purchasers Prices, Use Table at Basic Prices, Including a Transformation into Purchasers Prices, Trade and Transportation Margins, Net Taxes on Products, Imports Use Table, Input-Output Table Product by Product at Basic Prices, Input-Output Table for Imports at Basic Prices, Input-Output Table for Domestic Output at Basic Prices are prepared. In the process of converting supply and use tables from input-output tables product by product, the Almon method, which uses the product technology hypothesis, is used.

Almon Method, based on product technology assumption was used in the process of converting product-by-product input-output tables from supply and use tables. This method is a special mathematical algorithm that is used to prevent negative values in the product- by- product input-output tables.

### 3.3.2. Per Capita GDP

Per capita GDP is obtained by dividing the estimated GDP by the mid-year population estimate. The value expressed in Turkish lira is also converted into U.S. dollars by dividing it by the weighted average import exchange rate.

According to ESA-2010, foreign civilians residing in a country for one year or longer should be included in the total population as defined in the national accounts. It is also stated that the population defined for national accounts will differ from the current population consisting of persons actually present in the geographical territory of a country on a given date and from the registered population. In this context, a study was conducted on adding the number of Syrians in our country with under temporary protection status to the mid-year population. Along with this study, gross domestic product per capita values have been revised by adding Syrians residing in the country with under temporary protection status between 2013 and 2024 to the mid-year population, according to data obtained from the Ministry of Interior's Directorate General of Migration Management.

### 3.3.3. Annual GDP

In the Annual GDP estimations balanced with the Supply and Use Tables, estimates at current prices have been completed using the production, expenditure, and income approaches, while estimations using chain linked volume indices have been carried out for the production and expenditure approaches. For the years 2015–2023, all production and expenditure components have been recalculated through the rebalancing of the Supply-Use Tables. The production and intermediate consumption of activities at the A86 level has been estimated using the NACE Rev.2 classification, and the value added has been derived. Using both macro and micro approaches, the time series has been backcasted to 1995 at the A21 level.

### 3.3.4. Quarterly GDP

Quarterly GDP data are of critical importance for closely monitoring short-term developments in the economy, identifying cyclical fluctuations and enabling policymakers to make timely decisions. For this reason, comprehensive revision studies have been carried out in the quarterly GDP series calculated by the production, expenditure, and income approaches, and these revisions have been reflected in the official accounts. The main reason for this comprehensive work is the transfer of the updates and revisions made in the annual accounts to the quarterly accounts. These revisions made on an annual basis were supported by the integration of new administrative records into the system and by methodological improvements; thus, stronger integrity and consistency between annual and quarterly accounts have been achieved.

Within the scope of the revision, calculations were carried out at current prices and within the framework of the chain-linked volume index method, in accordance with the NACE Rev.2 classification, which is compatible with European Union standards; the series were detailed at the A-10 activity level. In this process, while the existing classification was preserved, the positions of some sectors within activity groups were updated, and these changes were reflected in the calculations. These adjustments emerged as a reflection of the revisions made in

government accounts and annual accounts, thereby strengthening the level of consistency and comparability between annual and quarterly accounts.

At present, the series starting from 1998 have been backcast to 1995 in order to increase alignment with Eurostat tables. For the part of the series covering 2015 and beyond, direct methods based on administrative records, current data sources, survey data, and microdata obtained from official statistics were used; for the pre-2015 period, however, various economic models and auxiliary indicators were employed in the backcasting process. The methodological details of the backcast application are explained in detail in the later sections of the document. For the series starting from 2009, the starting year has been preserved, and the same method has also been applied to this period.

The revision has not been limited to unadjusted series but has also covered adjusted series that facilitate the analytical use of statistics. Therefore, in line with the main revision policy determined under the "Directive on the Procedures and Principles Regarding Revisions in Statistical Data Produced by the Turkish Statistical Institute," the "calendar-adjusted," "seasonally adjusted," and "seasonally and calendar-adjusted" data have also been revised back to 1995.

### 3.3.5. GDP by the Income Approach

The income approach is one of the three main approaches used in the calculation of Gross Domestic Product (GDP). Within the scope of the income approach, compensation of employees, consumption of fixed capital, and net taxes on production and imports are directly calculated. Gross operating surplus/mixed income, on the other hand, is the only component not directly measured in the income approach; it is obtained residually by subtracting compensation of employees and net taxes from the GDP total. In this way, consistency is ensured between the total of all incomes generated in the production process and the GDP total calculated by the production approach; furthermore, by deducting consumption of fixed capital from this component, the net operating surplus is reached.

Through this approach, the distribution of incomes generated in the economy can be monitored in detail, the shares of factor incomes within GDP can be tracked, and consistency with GDP calculated by the production and expenditure approaches is ensured.

In GDP estimation by the income approach, the data used in the calculation of compensation of employees are obtained from the administrative records of the Social Security Institution (SSI), the Revenue Administration (RA), the Ministry of Treasury and Finance General Directorate of Public Accounts (MGA), the Banking Regulation and Supervision Agency (BRSA), as well as from the Household Labour Force Survey conducted by TURKSTAT. Thanks to the improvements achieved over time in administrative records, these data, which were previously used only as auxiliary indicators for extrapolating past series, have now been directly integrated into the GDP calculation by the income approach. Although this change has created partial revisions in the series, it offers a healthier calculation opportunity through the direct use of administrative data.

In the calculation of compensation of employees, both the unrecorded wages of registered persons and the wages of completely unregistered workers are taken into account; these calculations, as in previous practices, are carried out using predetermined ratios for informality. In determining these ratios, the results of the Household Labour Force Survey conducted by TURKSTAT and the records of the Social Security Institution (SSI) are taken as the basis. During the revision process, these ratios were recalculated and updated based on more recent data sources and measurement methods, and the results were reflected in GDP calculations using the income approach.

Along with these revisions, as well as updates made in other directly calculated components such as consumption of fixed capital and tax items, the GDP series calculated by the income approach starting from 1998 was also backcast to 1995, as was done with other series.

### 3.3.6. Backcasting of GDP Series to 1995

***Annual Accounts:*** The annual GDP series and its components for the years 1998–2008 backcasted according to the NACE Rev.2 classification at the A21 level using the mixed-splicing3 procedure, based on the overlapping years of the 2009=100 series published and the contribution of its revision to value added. For the years 1995-1997, the retropolation technique and the proportional distribution of sectors were used.

**Table 3 The studies on GDP by production approach**

| Components | Years | Methodology |
|---|---|---|
| Value added | 2015 – 2023 | Rebalanced supply and use tables (SUTs): Production and intermediate consumption estimations at A86 activity level according to Nace Rev 2 and 262 product groups at CPA Rev. 2.1 |
| Value added | 2009 – 2014 | Retrapolation -at A86 activity level according to Nace Rev 2 activity classifications, Production and intermediate consumption values for the years overlapping with the new series for 2009-2014 backcasting to A86 level and calculating the difference as value added. |
| Value added | 1998 – 2008 | Mixed splicing: Value added at A21 level backcasted by matching with the 2009=100-based series. |
| Taxes and Subsidies | 1998 – 2008 | A backcast level adjustment has not been made, only the distributions on the product have been changed. |
| Value added | 1995 – 1997 | For the first time, a backcasting has been performed using the retropolation technique and the proportional distribution of sectors. |
| Taxes and Subsidies | 1995 – 1997 | For the first time, a backcasting has been performed using the retropolation technique and the proportional distribution of sectors. |

3Handbook on Backcasting, 12th Meeting of the Advisory Expert Group on National Accounts, 27-29 November 2018, Luxembourg, Agendaitem: 8.iii.b Başlık: Retrapolation, Interpolation and Mixed Splicing Methods, Syf 22

**Table 4 Changes on the expenditure approach**

| Components | Years | Methodology |
|---|---|---|
| All expenditure components | 2015 – 2023 | Rebalanced supply and use tables and reconstructed commodity flow method |
| Household final consumption expenditures(HHFC) | 2015 – 2023 period :<br>2009 – 2014<br>1998 – 2008<br>1995 – 1997 | 2015 – 2023 period :<br>2015 - 2023 Commodity flow method are reconstructed by new SUT's.<br>2009 - 2014 period:<br>In COICOP 3 digit detail, retropolated by using the years 2015 - 2023.<br>1998 - 2008 period:<br>Only in total level is backcasted by using overlapping years with 2009=100 series.<br>1995 - 1997 period:<br>For the first time, backcasting was performed using retropolation and proportional adjustment techniques by overlapping the 1987 and 2009=100 -based series |
| Gross fixed capital formation | 2015 - 2023 period:<br>2009 – 2014<br>1998 – 2008<br>1995 – 1997 | 2015 - 2023 period:<br>2015 - 2023 Commodity flow method are reconstructed by new SUT's.<br>2009 - 2014 period:<br>ESA - AN (Asset) classification detail, retropolated by series overlapping 2009=100.<br>1998 - 2008 period:<br>Only in total level is backcasted by using overlapping years with 2009=100 series.<br>1995 - 1997 period:<br>For the first time, backcasting was performed using retropolation and proportional adjustment techniques by overlapping the 1987 and 2009=100-based series. |
| Non Profit institutions serving Households final consumption expenditures (NPISH) | 2015 - 2023 period:<br>1998 – 2014<br>1995 – 1997 | 2015 - 2023 period:<br>NPISH accounts for the years 2015 - 2023 (foundation, association balance sheets, federation data, political party aids, etc.) are used.<br>1998 - 2014 period:<br>Backcasting as level by using retropolation technique<br>1995 - 1997 period:<br>A backcasting is done for the first time using the proportional distributions in the expenditure approach and the value added under the heading 'Non-profit service organisations' in the production approach of GDP in the 1987-based series. |
| Export import | 2013 - 2023 period:<br>2013 – 2024<br>1998 – 2013<br>1995 – 1997 | 2013 - 2023 period:<br>Revisions made to tourism statistics up to 2012 have been reflected in the GDP calculation from 2013 onwards.<br>1998 - 2013 period:<br>Level changes have been reflected in previous years using the mixed splicing technique.<br>1995 - 1997 period:<br>Using proportional distributions in the expenditure approach, a backcasting was performed for the first time. |

Due to the revision work carried out on the production and expenditure approach during this publication period, the GDP and the value of fixed capital consumption have changed. Consequently, the operating surplus/mixed income variable, which is now integrated into the income approach and GDP estimation results, has also been revised. Revisions arising from

compensation of employees, taxes on production and subsidies have been reflected in the system

***Quarterly Accounts:*** Within the framework of the backcast approach used in GDP calculations, annual series based on the production and expenditure methods were first obtained, and then these annual series were disaggregated to the quarterly level. In this way, both the production of data consistent with annual macroeconomic indicators and international standards was ensured, and comparisons across periods became possible. In the process of aligning the revised series with annual totals, it is a great importance to make quarterly observations fully consistent with annual data. For this purpose, different temporal disaggregation and benchmarking methods were applied; in particular, it was ensured that the series acquired a balanced and stable structure both in terms of total levels and growth rates.

In this context, for each NACE Rev.2 two-digit level activity (at the A86 detail), five different disaggregation methods (Chow-Lin-Fixed, Fernandez, Litterman-Fixed, Denton_equal, and Denton-Cholette) were systematically tested. The results obtained from the applied methods were evaluated, analyzing both the extent to which short-term fluctuations were preserved and the degree of consistency with annual totals. As a result of these comparisons, for the period 2009–2015, the Denton_equal method was chosen, as it provided the most consistent and stable results at the A86 level. The Denton_equal method, in addition to being a temporal disaggregation technique that exactly matches the sum of quarterly series to annual observations (benchmarking), also preserves the proportional growth trends of the series, thereby making it possible to produce realistic and balanced quarterly series.

The decisive factors in choosing this method were its ability to exactly align quarterly values with annual observations and, at the same time, to preserve the growth trends of quarterly series more stably compared to other methods.

The backcasting of the series from 2009 back to 1995 was carried out at the A21 detail. In this way, the revised annual series were extended backward in a methodologically consistent manner, ensuring temporal integrity. Consequently, all quarterly series constructed from annual values were both extended backward over the long term (backcast) and supported by direct calculations in the current period. Thus, comparable, reliable, and balanced quarterly GDP series of the Turkish economy on a sectoral basis were obtained over a wider time span.

# Chapter 4 Improved Calculations

## 4.1. Supply and Use and Input-Output Tables

The 2023 Supply and Use Tables (SUTs) and Symmetric Input-Output Tables (SIOTs) have been prepared in accordance with the System of National Accounts (SNA-2008), the European System of Accounts (ESA-2010), and the recommendations in the UN's Handbook on Supply, Use and Input-Output Tables with Extensions and Applications, 2018. The 2023 Supply and Use Tables, prepared in both basic and purchasers' prices, were constructed for 64 industries and 64 product groups. Based on the 2023 Supply and Use Tables, product-by-product 2023

Input-Output Tables for 64 product groups were compiled. All supply and use tables up to the year 2015 were rebalanced using the input-output coefficients obtained from the SUTs calculated for the base year.

The data used in the preparation of the supply and use and input-output tables consist of administrative records, surveys, and censuses conducted by the Turkish Statistical Institute (TurkStat). While the primary data source for previous Supply-Use Tables was the SUTs Survey, the primary data source for the 2023 tables is administrative records. For illustrating the calculation details and the effective use of administrative records, the analyses and procedures undertaken to derive the production matrix for non-financial corporations are set out below.

The primary data source for the Non-Financial Corporations sector is the Annual Industry and Service Statistics (SBS). The SBS is compiled from administrative records based on financial statements obtained from the Revenue Administration Directorate. Although the SBS contains detailed information at the main activity level, it lacks information at the product detail level. Data from the Annual Industrial Product Statistics (PRODCOM) and Product Turnover Surveys were used to acquire data on the products (goods and services) produced by enterprises. By matching the tax identification numbers in the SBS with those in the product surveys, the product details of each enterprise were obtained. For enterprises covered within the SBS scope but not covered by the product surveys, product codes assignment was made according to the enterprise's main activity in the business register, aligned with the primary product in CPA Rev. 2.1. At this stage, considering the representation rates of sectors and products, the coverage of product surveys was expanded for certain sectors, and both activity and product controls were performed. Thus, the production value of each enterprise was calculated at activity and product levels. Subsequently, using the kind-of-activity unit (KAU) table from the TurkStat Business Register System, a conversion to the kind-of-activity unit was performed. The national accounts adjustments made at the sector level were distributed to the products of the sectors, forming the production matrix for S.11 - Non-financial corporations.

For S.12 – Financial corporations, S.13 – General government, S.14 – Households, and S.15 – Non-profit institutions serving households, production was first calculated both by activity and by product. The calculations took into account the distinction between market, non-market, and own-use output, and the results were subsequently incorporated into the production matrix.

**The Use Table** provides information on the uses of goods and services and the cost structures of industries. One of its most important components is the intermediate consumption matrix, also known as the input matrix, which shows the goods and services used by industries to produce their output. The columns represent industries, and the rows represent products.

The steps were followed in constructing the intermediate consumption values of industries:

- E-invoice data, E-producer data for agriculture, E-self-employed data for independent professionals, and data from the Government Movable Property Registration System were transferred to databases.

- Using the tax identification numbers in these records, the main activities from the TurkStat (Turkish Statistical Institute) Business Register were assigned.
- Using the patterns in the data records, whom-to-whom matrices were created at the main activity level.
- Subsequently, products were added to the activity-level relationships using activity-product tables.
- If material errors were detected in the data, they were corrected using turnover, production value, balance sheet, and income statement data.
- Products not within the scope of intermediate consumption (investment goods, goods for resale, etc.) were excluded.
- In the final stage, the intermediate consumption matrix by industry was compiled.

The following controls were performed on the obtained big dataset:

- Intermediate consumptions were listed for each sector and intermediate consumption ratios were calculated.
- For proportional controls, the 2012 Supply-Use Tables, the extrapolated supply and use tables currently used for GDP estimates, and the averages and medians of intermediate consumption ratios from EU countries were used at the sector and product level.
- When unexpected inputs and ratios were identified, the administrative records and surveys of the relevant enterprises were checked, and corrections were made if needed.

After the intermediate consumption matrix had been compiled, it was finalized by adding activity-level calculations for the national accounts (e.g. imputed rent, FISIM, etc.).

In the Supply Table, domestic production is valued at basic prices, while imports are valued at CIF (Cost, Insurance, and Freight) prices. Trade and transport margins, defined as valuation matrices, and net taxes on products are used to convert the supply table at basic prices into the supply table at purchasers' prices. The compilation of valuation matrices is a fundamental step in the process of compiling Supply-Use Tables (SUTs). These matrices are crucial for ensuring the tables are reconcilable. For the 2023 SUTs, all valuation matrices were reconstructed.

**Use Table for Taxes and Subsidies on Products**

Within the scope of the calculations for the Use Table for Taxes and Subsidies on Products, the legislation regarding taxes and subsidies was reviewed within the System of National Accounts and the Turkish Tax System to determine the relationship of the relevant tax or subsidy with products and activities. The study was conducted at the 3-digit detail level of the CPA Rev. 2.1 classification. Data from the Ministry of Trade and the Revenue Administration Directorate were utilized to determine VAT rates at the product level. For product assignment related to Special Consumption Tax (SCT), the Schedules I, II, III, and IV prepared under the Special Consumption Tax Law No. 4760 were used. For other taxes on products, product assignments were made by examining the legislation on relevant taxes. The National Tax List, prepared within the scope of data obtained from the General Directorate of Public Accounts, was used for distributing taxes and subsidies on products across activity, product, and expenditure components.

**Import Use Table**

Within the framework of the main revision studies, the 2023 Import Use Table was compiled by considering all data sources. The preparation of this table is a crucial stage for constructing the Domestic Use Table at basic prices, compiling the Import Input-Output Table, and for general economic equilibrium.

The Import Use Table provides information on the use of imported products for intermediate consumption and final uses. The total column of the Import Use Table is also one of the valuation columns of the Supply Table. It is one of the important tables showing the structure of imports, their place in the overall economy, and their necessity and dependency.

**Method and Data Sources**

Imports are compiled from three main data sources:

1. Goods Imports: Obtained from International Trade Statistics.
2. Services Imports: Obtained from Balance of Payments statistics.
3. Tourism: Obtained from Tourism statistics.

The aforementioned data are compiled according to the CPA Rev. 2.1 classification and processed into the import use table. Furthermore, for the Import Use Table, these datasets need to be converted into Use Table components (intermediate consumption matrix and final use). Therefore, the table compilation process was carried out in three stages, according to the relevant data sources.

**Goods import:** Goods import data are provided by the TurkStat Directorate of International Trade Statistics, Group Presidency of International Merchandise Trade Statistics (at CIF prices). In economic statistics, primarily national accounts and balance of payments, foreign trade data obtained under the General Trade System (GTS) are used. Within the GTS, goods entering or leaving free zones, customs warehouses, and the free circulation area are included in the calculations.

The data is published according to the HS (Harmonized System), SITC (Rev.2–Rev.4), ISIC (Rev.2–Rev.4), BEC, CPA, and CPC classifications. This data was matched with the TurkStat Business Register Framework to obtain detail by institutional sector, activity, and product. The same method was applied for re-exports and goods supplied in ports.

HS, BEC, and SITC codes were utilized to align with ESA 2010 classifications (Intermediate consumption P2, final consumption P3, investment P51, etc.), and through checks at the enterprise level, correct assignment to Use Table components was ensured.

**Services Imports:** Services import data are compiled by the TurkStat Directorate of International Trade Statistics, Group Presidency of International Trade in Services Statistics, within the scope of the International Trade in Services Survey (ITSS).
These data constitute a significant component of the balance of payments statistics prepared by the Central Bank of the Republic of Türkiye (CBRT). The ITSS covers enterprises with

maintenance, repair, processing, and labor value, as well as enterprises in the insurance and financial sectors.

The data are presented according to service codes and the EBOPS (IMF-BPM6) classification. Matching with the TurkStat Business Register Framework provided detail by institutional sector, activity, and EBOPS. Subsequently, an EBOPS–CPA 2.1 (5-digit) conversion table was created through enterprise-based examinations, and services data were classified according to ESA.

**Tourism:** Tourism data are provided by the TurkStat Directorate of International Trade Statistics, Group Presidency of Tourism Statistics.
The content of tourism data differ from travel data within the balance of payments scope. Tourism data obtained by TurkStat are transmitted to the CBRT; the processed results are then transferred back to TurkStat.

Tourism statistics are converted to the CPA Rev. 2.1 classification for use in the Use Tables; in the Import Use Table, they are added directly to the household final consumption column.

Finally, the three datasets were combined to create the Import Use Table according to NACE Rev.2 for activities, CPA Rev. 2.1 for products, and ESA codes for types of use.

### 4.2. GDP Per Capita Calculation

Per capita GDP is conventionally derived by dividing the estimated GDP by the mid-year resident population. According to ESA-2010, *"Chapter 11: Population and Labour Inputs"*, foreign civilians residing in a country for one year or longer must be incorporated into the population definition used in the national accounts framework. Importantly, ESA-2010 also underscores that the population applied in national accounts differs conceptually from both the de-facto population—those physically present within the country's territory at a given point in time—and the officially registered population.

Accordingly, persons who were not included in the official mid-year population used in the calculation of per capita GDP, but who meet the residency definition specified above, were incorporated into the population and the calculations were revised.

In this context, based on the data obtained from the Presidency of Migration Management of the Ministry of Interior, Syrians under temporary protection residing in the country during the period 2013–2024 were added to the mid-year population, and GDP per capita figures were revised. The results of this revision are presented in Table 5.

**Table 5. Revision on Per Capita GDP**

| Year | Per Capita GDP (YTL) | | | Per Capita GDP (USA $) | | | Change in level (%) |
|---|---|---|---|---|---|---|---|
| | Before Revision | After Revision | Difference due to Revision | Revizyon Öncesi | Revizyon Sonrası | Difference due to Revision | |
| 2013 | 23 946 | 24 017 | 72 | 12 582 | 12 620 | 38 | 0.3 |
| 2014 | 26 624 | 26 422 | - 202 | 12 178 | 12 086 | - 92 | -0.8 |
| 2015 | 30 056 | 29 341 | - 715 | 11 085 | 10 822 | - 264 | -2.4 |
| 2016 | 33 131 | 32 094 | -1 037 | 10 964 | 10 621 | - 343 | -3.2 |
| 2017 | 39 019 | 37 769 | -1 250 | 10 696 | 10 354 | - 343 | -3.3 |
| 2018 | 46 202 | 44 803 | -1 399 | 9 799 | 9 502 | - 297 | -3.1 |
| 2019 | 52 287 | 51 064 | -1 223 | 9 208 | 8 992 | - 215 | -2.4 |
| 2020 | 60 545 | 59 116 | -1 429 | 8 600 | 8 397 | - 203 | -2.4 |
| 2021 | 86 232 | 84 635 | -1 596 | 9 601 | 9 424 | - 178 | -1.9 |
| 2022 | 176 651 | 172 922 | -3 729 | 10 659 | 10 434 | - 225 | -2.2 |
| 2023 | 311 109 | 305 570 | -5 540 | 13 243 | 13 008 | - 236 | -1.8 |
| 2024 | 507 615 | 503 076 | -4 539 | 15 463 | 15 325 | - 138 | -0.9 |

## 4.3. GDP Calculations with Annual and Quarterly Chain-Linked Volume Indices

Calculations with the chain-linked volume index aim to measure changes in production more accurately by eliminating the effect of inflation. These calculations, which remove the impact of price changes and reflect only real change, have replaced the traditional constant price GDP method. Since chain-linked indexes are based on the current price structure, they ensure a more accurate adjustment for price changes. However, a disadvantage of chain-linking methods is the emergence of the "non-additivity" problem when moving from subcomponents to the aggregate total.

There are three main methods for calculating chain-linked volume indexes: linking with the previous year's average (annual overlap), linking with the previous year's last quarter (one quarter overlap), and linking with the same quarter of the previous year (over the year). In Türkiye and international applications, the most widely preferred method is the annual overlap method. With this method, the consistency between quarterly series' annual totals and annual accounts increases, deviations caused by seasonal fluctuations are reduced, and compliance with the method recommended by international standards is achieved.

Depending on the backcasting method of the series:

- For the years 1995–2008, quarterly value added at current prices by economic activity branches was estimated, and then the value added of each activity was calculated at the

previous year's mid-year prices. Current values and previous year's mid-year values were chain-linked using the annual overlap method, and index and volume values were obtained.

- For the years 2009–2014, at the two-digit level of NACE Rev.2 activity classification, quarterly production and intermediate consumption values at current prices were estimated, and then, at each two-digit activity level, production and intermediate consumption values were calculated separately at the previous year's mid-year prices. By taking the difference of these values, value added at the two-digit activity level was obtained; using current values, chain-linked indexes and volume values were created with the same method.
- According to the expenditure approach, the chain-linked volume index of GDP was estimated quarterly for the years 1995–2014 on the basis of each expenditure component at current prices, and calculated at the previous year's mid-year prices. Current and previous year's mid-year values were converted into chain-linked indexes and volume values using the annual overlap method.
- From 2015 onwards, no methodological change was made in the calculation of quarterly and annual chain-linked volume indexes, and the index series continued with 2009=100 as the base year

## 4.4. Estimates of the Non Observed Economy

National Accounts are a system designed to present economic activities within the production boundary according to various variables, such as economic activities or expenditure categories. National Accounts are not limited only to legal and registered activities. Within the framework of the System of National Accounts (SNA), the aim is to fully measure all productive activities, including those of the informal economy, that fall within the production boundary.

TurkStat measures informal economic activities by economic activity and institutional sector in line with Eurostat's "Tabular Approach" in the calculations of informality at the sectoral level, the "Labour Input Method" which is an internationally recognized approach, is used. This method is based on the analysis of employment data obtained from household labour force surveys and population results, compared with employment data derived from industrial and service statistics. Within this scope, labour input data are used as the main indicator for production. Using informal labour input data, informal production is estimated. This method is recommended by international organizations such as the United Nations, OECD, and ILO.

**Table 6 Tabular Approach on Informal Economy**

| TYPE | DEFINITION | APPLICATION |
|---|---|---|
| N1 – Producers required to be registered: Underground | The producer does not register in order to avoid tax and social security obligations. | Labour Input Method |
| N2 – Unregistered illegal producers: Illegal | The producer does not register because the activity itself is illegal (e.g., drug production, fuel smuggling). | Proportional adjustment for tobacco products and fuel |
| N3 – Producers not required to be registered | The producer is not required to register since there is no market output (e.g., production for own final use). | Agriculture and livestock accounts; Major repairs carried out in own dwellings |
| N4 – Registered legal entities not included in statistics | Exclusion from survey frames due to outdated business registers, misclassified units, or some legal units falling below certain thresholds. | - |
| N5 – Registered entrepreneurs not included in statistics | Entrepreneurs not covered due to outdated or inaccurate records, etc. | - |
| N6 – Underreporting by producers | Although registered, producers understate income or overstate expenses in order to avoid income tax, VAT, other taxes, or social security contributions. | Labour Input Method and general balance adjustments |
| N7 – Statistical deficiencies in data | Estimation problems such as secondary activities, tips, payments in kind, or non-response adjustments. | Tips, private tutoring |

## 4.5. Major Repairs by Households on Their Own Dwellings

Account N3, a component of the non-observed economy which is calculated indirectly from household budget surveys or time use surveys when direct data is unavailable in EU countries, has been included in the system for the first time. The calculation was performed using the Time Use Survey. A calculation was made considering the time spent by households on housing repair and maintenance and the hourly earnings of workers in the construction sector.

## 4.6. Imputed Rent Calculations in National Accounts

In National Accounts, real estate services cover not only the economic benefit provided by renting out dwellings but also the economic benefit derived from dwellings owned and occupied by individual households. The output value of the real estate services sector is the sum of actual rent and imputed rent.

In the accounts, real estate services cover not only the economic benefit generated from the rental of dwellings but also the economic benefit imputed to owner-occupied dwellings. The output of the real estate services sector is measured as the sum of actual rent and imputed rent.

A dwelling that is not used by its owner but instead rented out to another party provides monetary income in the form of actual rent. For an owner-occupied dwelling, no monetary income is generated; however, the contribution and benefit to the household's income level

from using the dwelling is considered as imputed rent. Imputed rent is calculated based on the rental value that households—whether as homeowners, residents of employer-provided housing, or those living in relatives' homes—would have to pay in the market for a dwelling with similar characteristics.

The measurement of imputed rent is done by two methods: the "Cost Account Method" and the "Stratification Method". Under the stratification method, information is required on the total number of dwellings to be rented, the rental values by stratum, and the number of dwellings within each stratum. In forming the strata, dwelling characteristics such as location and number of rooms are taken into account. According to the European Commission decision (95/309), stratification based on the location of the dwelling and at least one key indicator is required, classified into at least 30 cells. It is also important that the stratification significantly represents the housing stock. Even with few variables, it is sufficient if the established model explains at least 70% of the rental market and the correlation coefficient reaches 0.7. However, the stratification method is not recommended in countries where the number of rented dwellings is very low or where renting is not widespread. For example, in some countries, rental dwellings may only be available to foreigners or government employees and are not widespread. In some countries, rental dwellings are only found in capital cities, while in other cities, dwellings are not rented out.

TurkStat applies the stratification method, using actual rental values. By employing an inductive approach from the provincial level, imputed rent values are calculated for Türkiye as a whole.

As part of EU projects aimed at improving rental estimations, enhancements have been made to the calculation methodology. These improvements include the integration of the most recent *2021 Population and Housing Census* results, the use of monthly household counts, and the updating of rental price data. Internal data sources such as the *Household Budget Survey* and the *Household Income and Living Conditions Survey* have also been examined for alternative estimates of actual and imputed rents. Nevertheless, in line with international recommendations, the stratification method has been retained.

**Data sources used for imputed rent calculations**

**Department of Demographic Statistics**

- Monthly occupied dwelling counts, by province and urban-rural classification

**2021 Population and Housing Census**

- Number of rooms, urban-rural, actual vs. imputed dwellings by province.
- Distribution of households by tenure status.

**Household Budget Survey**

- Actual and imputed rent information by number of rooms.

**Household Income and Living Conditions Survey**

- Actual and imputed rent information by number of rooms.

**Consumer Price Index (CPI)**

- Rental values by province.

**Supply and Use Tables**

- Intermediate consumption value calculated for CPA 68.1.

**External sources**

- Rental indices (e.g., Endeksa data)

In imputed rent calculations, rental values compiled at the provincial level, together with information on household dwellings and household counts, are used to estimate the production value. From this value, the intermediate consumption derived from the Supply and Use Tables is subtracted to obtain value added. This measure covers only the rental value of dwellings. It excludes additional components such as electricity, fuel, garage rents, and the value of furnished dwellings.

### 4.7. Improvement in FISIM Estimations

As part of the main revision aimed at strengthening the alignment of Türkiye's national accounts system with international methodologies and enhancing statistical consistency, significant improvements were made in the calculation of Financial Intermediation Services Indirectly Measured (FISIM). Within this scope, the method for determining the reference interest rate, which constitutes a key component of FISIM calculations, was reviewed, and various approaches recommended in international guidelines (ESA-2010, BPM6, IMF BOP Manual) were tested under Turkish conditions.

The types of reference interest rates that were calculated and subjected to comparative analysis are as follows:

- Average Reference Rate
- Weighted Average Reference Rate (WARR)
- Reference Rate for Financial Loans
- Reference Rate for Bank Loans
- Reference Rate for Bank Deposits
- Interest Rate on Money Market Receivables
- TLREF

These rates were calculated using accounting records and financial statistics in Türkiye and were evaluated in terms of their representativeness, consistency with financial transactions, and methodological adequacy. The analysis concluded that the application of the Weighted Average Reference Rate (WARR) provides a solution that is both suitable for Türkiye's conditions and consistent with international standards, resulting in a significant improvement in the calculations.

## 4.8. Agriculture Sector Accounting in National Accounts

The CPA Rev. 2.1 classification was used instead of the CPA 2008 classification for products. In the calculations at current prices and using the chained volume index, series of the Agricultural Producer Price Index (Agricultural PPI) with 2009=100 as the base year were used**.** Agricultural R&D activities were included in the agricultural sector accounts for the first time. The data sources and methodologies for the crop production, livestock, forestry, and fisheries sectors were reviewed, and the calculations were updated. The data sources used in the agricultural sector accounts are as follows:

***Crop Production:***

- Production quantities of crops estimated by the Ministry of Agriculture and Forestry,
- Production data (quantities and prices) from Turkish Statistical Institute (TurkStat), Agriculture Statistics Department,
- Agricultural Producer Price Index (Agricultural PPI) and Agricultural Input Price Index (Agricultural IPI) from TurkStat,
- Seasonal water usage on lands from the General Directorate of State Hydraulic Works for crop sector input calculations,
- Quantities and prices of pesticides and chemical fertilizers used in crop sector input calculations from the Ministry of Agriculture and Forestry,
- Data from the "Economic Accounts of Agriculture" studies for 2008 and 2015, used for loss ratios and secondary products calculations.

***Livestock Sector:***

- Number of animals and their prices, as well as production quantities and prices of animal products, from the Turkish Statistical Institute (TurkStat), Agriculture Statistics Department,
- Agricultural Producer Price Index (Agricultural PPI) and Agricultural Input Price Index (Agricultural IPI) from TurkStat,
- Data from the "Economic Accounts of Agriculture" studies for 2008 and 2015, used for loss ratios and secondary products calculations.

***Forestry Sector:***

- Production quantities and prices of primary and secondary forest products from the Ministry of Agriculture and Forestry,
- Agricultural Producer Price Index (Agricultural PPI) and Agricultural Input Price Index (Agricultural IPI) from Turkish Statistical Institute (TurkStat).

***Fisheries Sector:***

- Seasonal quantities and prices of all fish species collected from the 81 provincial organizations of the Ministry of Agriculture and Forestry,

- "Aquaculture Statistics" published by Turkish Statistical Institute (TurkStat), Agriculture Statistics Department, and the Agricultural Producer Price Index (Agricultural PPI).

## 4.9. Government Accounts

The main revision represents the first comprehensive revision of general government accounts, including improvements in data sources and methodological alignment, since the initial publication of general government accounts with the transition to ESA 2010 on 12 December 2016. Since 2016, based on technical studies mainly conducted with Eurostat and decisions made in local working groups, these revisions have been classified into three main categories:

***Updates within the Scope of General Government***

As a result of evaluations conducted within the scope of alignment with international criteria, the new units included in the general government (administration) sector list published on 15 June 2024 have been integrated into the accounts from the revision start dates indicated in the table below. Compared to previous studies, this revision involved extensive changes, and for the first time, financial corporations and non-profit institutions were included in the general government list.

**Table 7 General Government Sector List for 2024**

| Institution Name | Old Sector Code | New Sector Code | Start Year |
|---|---|---|---|
| Municipalities and Affiliated Administrative Personnel Companies | S.1313 | S.11 | 2018 |
| | | | |
| Administrations Affiliated to Municipalities | S.1313 | S.11 | 2009 |
| General Directorate of the State Supply Office | S.1311 | S.11 | 2019 |
| Izmir Suburban Transportation System Trade Incorporated Company | S.1313 | S.11 | 2015 |
| Irrigation Unions | S.1313 | S.11 | 2019 |
| Sumer Holding Incorporated Company | S.1311 | S.11 | 2015 |
| National Fund (Ministry of Treasury and Finance - General Directorate of Foreign Economic Relations) | S.1311 | S.11 | 2015 |
| International Conformity Assessment Service Incorporated | S.1311 | S.11 | 2020 |
| Natural Disaster Insurance Institution | S.1311 | S.12 | 2015 |
| İlbank Corporation | S.1311 | S.12 | 2009 |
| Savings Deposit Insurance Fund | S.1311 | S.12 | 2009 |
| Foundation for Strengthening the Judicial Organization | S.1311 | S.15 | 2015 |
| Türkiye Education Foundation | S.1311 | S.15 | 2017 |
| Yunus Emre Foundation | S.1311 | S.15 | 2017 |
| Special Accounts of the Disaster and Emergency Management Authority | S.1311 | | 2015 |

| Institution Name | Old Sector Code | New Sector Code | Start Year |
|---|---|---|---|
| Disaster Reconstruction Fund (Ministry of Treasury and Finance – Directorate General of External Economic Relations) | S.1311 | | Inactive |
| Family and Youth Fund (Ministry of Treasury and Finance - General Directorate of Financial Markets and Exchange) | S.1311 | | 2024 |
| Special Account for Removal from Service (Ministry of Energy and Natural Resources) | S.1311 | | Inactive |
| Radioactive Waste Management Special Account (Ministry of Energy and Natural Resources) | S.1311 | | Inactive |
| Special Account for Copyrights (Ministry of Culture and Tourism) | S.1311 | | Active* |
| Türkiye Environment Agency | S.1311 | | Active* |

**These units have been incorporated into the general government accounts as of their respective **operational dates** and were added to the **official list** through the aforementioned update.*

The data of these units, which have been included in the general government list because they are non-profit institutions controlled by general government units, provide auxiliary services to general government units, have a client base of over 80% general government units, operate national deposit guarantee fund activities, and engage in non-market activities due to strong financial and control links with the general government, have been integrated into previous years' accounts to the extent allowed by data quality.

Due to the activities of these new units, the S.13 General Government sector has recorded production values in NACE sectors 49, 64, 65, 66, and 78 from the relevant years onward, as well as in NACE sector 90**,** which has become visible through the new calculation methodology**.**

***Methodological Improvements***

Methodological improvement efforts in the national accounts system are being carried out continuously. To this end, reports issued by international organizations are reviewed, and international developments are monitored through participation in seminars, conferences, and meetings. Additionally, technical support is obtained from the European Union's statistical office (Eurostat) and other EU member states' statistical offices within the framework of IPA (Multi-Beneficiary Statistical Cooperation) projects to enhance alignment with ESA 2010**.**

As a result of these efforts, reclassifications have been made that enhance the compatibility of our national practices**.** In this context, mandatory contributions and similar revenues collected by general government units have been classified as taxes**.** Revenues derived from mineral resources**,** being natural resource rents, have been removed from taxes and classified under D.45 Property Income**.** Revenues collected under tax amnesties have been classified under D.91 Capital Taxes in accordance with Eurostat recommendations, rather than under the relevant current tax items. Subsidy and social benefit expenditures have been methodologically reassessed, and changes have been implemented. Taxes paid by general government units have been disaggregated into D.29 Taxes on Production and D.51 Taxes on Income**.**

***Updates in Data Sources and Error Corrections***

The reasons for the revisions under this heading stem from improvements to the primary data source**,** the General Directorate of Accounting of the Ministry of Treasury and Finance, as well as from the correction of inconsistencies and breaks identified through detailed analyses and up-to-date assessments**,** and adjustments made in accordance with technical recommendations. These measures have enhanced data quality and consistency**.** Within this scope, new revenue and expenditure details identified in microdata have been incorporated and retrospective data updates have been implemented. Differences in ESA codes at the micro level and across sectors identified in the time series were evaluated to increase compatibility. Adjustments arising from national accounts corrections—including Research and Development Expenditures (R&D)**,** Consumption of Fixed Capital (CFC)**,** Output for Own Account Software (OAS), and Financial Intermediation Services Indirectly Measured (FISIM)**—**have been reflected. Amounts that previously created missing or inconsistent values, particularly negative tax revenues, have been corrected in the national tax list. In particular, consolidation values prior to 2015 have been adjusted using counter-sector data and supplementary information.

### 4.10. Calculations related to exports and imports of goods and services

Calculations of exports and imports of goods and services included in GDP by the expenditure approach have been updated in line with improvements in data sources. In this context, changes in the calculation methods applied in the "The Departing Visitors Survey" and the "The Arriving Citizens Survey" conducted by the Tourism Statistics Group, International Trade Statistics Department of TurkStat have been reflected in the tourism revenue and expenditure indicators. Additionally, tourism revenue derived from transfer travelers has been calculated and included as a new item.

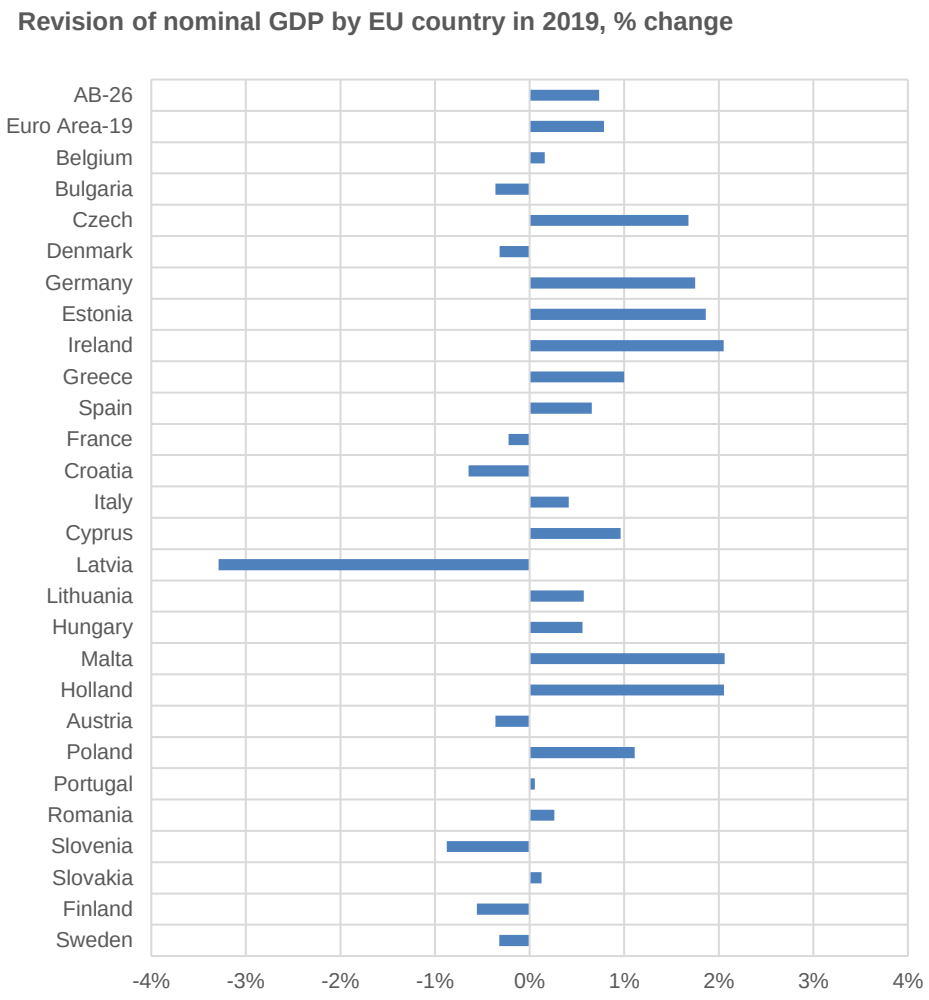
These revisions have been applied to the travel component, a sub-item of GDP by the expenditure approach, to ensure consistency with the Balance of Payments statistics of the Central Bank of the Republic of Türkiye (CBRT). Furthermore, the Balance of Payments service items have been fully converted to the CPA Rev. 2.1 product classification, and the product classification used in the calculations of exports and imports of goods and services has been updated from CPA 2008 to CPA Rev. 2.1.

## Chapter 5 Other Country practices

The main purpose of the revision carried out in EU countries in 2024 is to integrate new data sources and the revised classification of final consumption expenditure, as well as improved estimation methods, into the System of National Accounts. In particular, the revision aims to provide indicators relating to the verification of government financial statistics used to determine EU budget contributions, such as gross national income, public deficit and debt figures, and macroeconomic imbalances in the EU. Furthermore, the revision covers improving estimates for fixed capital consumption, GDP volume estimation, employment, the activities of multinational companies and ensuring the consistency of national accounts and balance of payments statistics. Reflecting the latest population census in the national accounts system,

improving data sources and reviewing and improving estimation methods are also important topics. For details on the 2024 benchmark revisions in EU countries, please visit the Eurostat[4] website.

Figure 2 presents the impact of the revision on GDP in EU countries at current prices for 2019. The revision had an upward effect of 0.7% on the EU average in 2019. The highest change was observed in Latvia at -3.3%, while the lowest change was observed in Portugal at 0.1%. Overall, the impact of the revisions is mostly positive, except for Greece, France, Latvia, Austria, Slovenia, Finland and Sweden. Malta made the largest upward revision in the 2024 revision.




*Source:* Eurostat (nama_10_gdp)

**Figure 2 Revision of nominal GDP by EU Countries 2019**

[4] "National accounts coordinated 2024 benchmark revision - impact on annual main GDP and employment aggregates" adlı yayına Eurostatın web sayfasından ulaşılabilir.

https://ec.europa.eu/eurostat/statistics-explained/index.php?title=National_accounts_coordinated_2024_benchmark_revision_-_impact_on_annual_main_GDP_and_employment_aggregates

## Table 8 Impact of the benchmark revision on the level of GDP by country

**Impact of the benchmark revision on the level of GDP by country (% change in current prices, 2015-2023)**

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|
| **AB-26** | 0,7% | 0,7% | 0,7% | 0,7% | 0,7% | 0,8% | 1,1% | 1,4% | 1,3% |
| **Euro Area-19** | 0,9% | 0,8% | 0,8% | 0,8% | 0,8% | 0,8% | 1,1% | 1,6% | 1,5% |
| **Belgium** | -0,3% | -0,4% | -0,4% | -0,1% | 0,2% | 0,7% | -0,4% | 1,7% | 2,0% |
| **Bulgaria** | 0,0% | 0,0% | 0,0% | -0,1% | -0,4% | 0,5% | 0,4% | 0,3% | 0,8% |
| **Czech** | 0,6% | 1,0% | 1,3% | 1,2% | 1,7% | 2,1% | 3,3% | 3,9% | 3,7% |
| **Denmark** | -0,3% | -0,3% | -0,2% | -0,4% | -0,3% | 0,2% | 0,7% | 0,4% | 0,7% |
| **Germany** | 2,0% | 2,0% | 2,0% | 2,0% | 1,7% | 1,3% | 1,6% | 2,0% | 1,5% |
| **Estonia** | 1,8% | 2,0% | 2,0% | 2,0% | 1,9% | 1,6% | 0,9% | 1,2% | 1,3% |
| **Ireland** | 3,4% | 2,4% | 3,3% | 2,3% | 2,1% | 1,9% | 3,5% | 2,9% | 1,1% |
| **Greece** | -0,6% | 0,0% | 0,3% | 0,6% | 1,0% | 1,5% | 1,7% | 0,6% | 2,2% |
| **Spain** | 0,8% | 0,8% | 0,6% | 0,7% | 0,7% | 0,9% | 1,1% | 2,0% | 2,5% |
| **France** | 0,1% | -0,1% | -0,2% | -0,3% | -0,2% | 0,0% | 0,2% | 0,6% | 0,7% |
| **Croatia** | 0,0% | -0,2% | -0,2% | -0,3% | -0,6% | -0,4% | -0,9% | -1,1% | 2,1% |
| **Italy** | 0,5% | 0,5% | 0,5% | 0,4% | 0,4% | 0,5% | 1,1% | 1,7% | 2,0% |
| **Cyprus** | 0,0% | 0,0% | 0,0% | 0,6% | 1,0% | 1,3% | 3,0% | 5,9% | 5,1% |
| **Latvia** | -3,4% | -3,4% | -3,6% | -3,4% | -3,3% | -2,9% | -3,2% | -5,9% | -3,2% |
| **Lithuania** | 0,3% | -0,2% | 0,0% | 0,9% | 0,6% | 0,8% | 0,4% | 0,0% | 2,5% |
| **Hungary** | 0,1% | 0,3% | 0,2% | 0,4% | 0,6% | 0,7% | 0,6% | 0,3% | 0,1% |
| **Malta** | 2,2% | 3,1% | 5,0% | 4,9% | 2,1% | 7,4% | 8,7% | 4,6% | 6,3% |
| **Holland** | 1,3% | 1,7% | 1,7% | 1,7% | 2,1% | 2,5% | 2,4% | 3,7% | 3,2% |
| **Austria** | -0,6% | -0,5% | -0,6% | -0,5% | -0,4% | -0,1% | 0,2% | 0,2% | -1,0% |
| **Poland** | 0,6% | 0,7% | 0,7% | 1,0% | 1,1% | 1,1% | 1,1% | 0,8% | -0,3% |
| **Portugal** | -0,2% | -0,1% | -0,2% | -0,1% | 0,1% | 0,3% | 0,2% | 0,7% | 0,7% |
| **Romania** | 0,0% | 0,0% | 0,0% | 0,1% | 0,3% | 0,3% | 0,3% | -0,8% | -0,1% |
| **Slovenia** | -0,9% | -1,1% | -0,9% | -0,9% | -0,9% | -0,7% | -0,5% | -0,2% | 1,4% |
| **Slovakia** | 0,3% | 0,4% | 0,3% | 0,4% | 0,1% | 0,9% | 1,7% | 0,3% | 0,1% |
| **Finland** | -0,6% | -0,8% | -0,7% | -0,7% | -0,6% | -0,7% | -0,8% | -0,6% | -0,6% |
| **Sweden** | -0,7% | -0,3% | -0,9% | -0,7% | -0,3% | -0,3% | -0,4% | -1,8% | -1,4% |

*Source:* Eurostat (nama_10_gdp)

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**Annex 1 Nace Rev. 2 A86 Activity level (codes, definition)**

A01- Crop and animal production, hunting and related service activities
A02- Forestry and logging
A03- Fishing and aquaculture
B05- Mining of coal and lignite
B06- Extraction of crude petroleum and natural gas
B07- Mining of metal ores
B08- Other mining and quarrying
B09- Mining support service activities
C10- Manufacture of food products
C11- Manufacture of beverages
C12- Manufacture of tobacco products
C13- Manufacture of textiles
C14- Manufacture of wearing apparel
C15- Manufacture of leather and related products
C16- Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
C17- Manufacture of paper and paper products
C18- Printing and reproduction of recorded media
C19- Manufacture of coke and refined petroleum products
C20- Manufacture of chemicals and chemical products
C21- Manufacture of basic pharmaceutical products and pharmaceutical preparations
C22- Manufacture of rubber and plastic products
C23- Manufacture of other non-metallic mineral products
C24- Manufacture of basic metals
C25- Manufacture of fabricated metal products, except machinery and equipment
C26- Manufacture of computer, electronic and optical products
C27- Manufacture of electrical equipment
C28- Manufacture of machinery and equipment n.e.c.
C29- Manufacture of motor vehicles, trailers and semi-trailers
C30- Manufacture of other transport equipment
C31- Manufacture of furniture
C32- Other manufacturing
C33- Repair and installation of machinery and equipment
D35- Electricity, gas, steam and air conditioning supply
E36- Water collection, treatment and supply
E37- Sewerage
E38- Waste collection, treatment and disposal activities; materials recovery
E39- Remediation activities and other waste management services
F41- Construction of buildings
F42- Civil engineering
F43- Specialised construction activities
G45- Wholesale and retail trade and repair of motor vehicles and motorcycles
G46- Wholesale trade, except of motor vehicles and motorcycles
G47- Retail trade, except of motor vehicles and motorcycles
H49- Land transport and transport via pipelines

H50- Water transport
H51- Air transport
H52- Warehousing and support activities for transportation
H53- Postal and courier activities
I55- Accommodation
I56- Food and beverage service activities
J58- Publishing activities
J59- Motion picture, video and television programme production, sound recording and music publishing activities
J60- Programming and broadcasting activities
J61- Telecommunications
J62- Computer programming, consultancy and related activities
J63- Information service activities
K64- Financial service activities, except insurance and pension funding
K65- Insurance, reinsurance and pension funding, except compulsory social security
K66- Activities auxiliary to financial services and insurance activities
L68- Real estate activities
M69- Legal and accounting activities
M70- Activities of head offices; management consultancy activities
M71- Architectural and engineering activities; technical testing and analysis
M72- Scientific research and development
M73- Advertising and market research
M74- Other professional, scientific and technical activities
M75- Veterinary activities
N77- Rental and leasing activities
N78- Employment activities
N79- Travel agency, tour operator and other reservation service and related activities
N80- Security and investigation activities
N81- Services to buildings and landscape activities
N82- Office administrative, office support and other business support activities
O84- Public administration and defence; compulsory social security
P85- Education
Q86- Human health activities
Q87- Residential care activities
Q88- Social work activities without accommodation
R90- Creative, arts and entertainment activities
R91- Libraries, archives, museums and other cultural activities
R92- Gambling and betting activities
R93- Sports activities and amusement and recreation activities
S94- Activities of membership organisations
S95- Repair of computers and personal and household goods
S96- Other personal service activities
T97- Activities of households as employers of domestic personnel

**Annex 2 Nace Rev. 2 A21 Activity level (codes, definition)**

A- Agriculture, forestry and fishing
B- Mining and quarrying
C- Manufacturing
D- Electricity, gas, steam and air conditioning supply
E- Water supply; sewerage, waste management and remediation activities
F- Construction
G- Wholesale and retail trade; repair of motor vehicles and motorcycles
H- Transportation and storage
I- Accommodation and food service activities
J- Information and communication
K- Financial and insurance activities
L- Real estate activities
M- Professional, scientific and technical activities
N- Administrative and support service activities
O- Public administration and defence; compulsory social security
P- Education
Q- Human health and social work activities
R- Arts, entertainment and recreation
S- Other service activities
T- Activities of Households as Employers; Undiferentiated Goods- and Services-producing Activities of Households for own use
U- Activities of extraterritorial organisations and bodies

**Annex 3 Nace Rev. 2 A10 Activity level (codes, definition)**

A- Agriculture, forestry and fishing
BCDE- Industry
F- Construction
GHI- Services
J- Information and communication
K- Financial and insurance activities
L- Real estate activities
MN- Professional, administrative and support service activities
OPQ- Public administration, education, human health and social work activities
RST- Other service activitie