

The revision of GDP and main aggregates of the National Accounts

Years 2019-2022

As usual, with the September 2023 publication, Istat revises the estimates released in March of the same year, following the revision policy recommended by the European Commission for EU Member States.

Consistent with this revision policy, the estimates of the country's National Accounts aggregates are subject to an ordinary revision process¹ that guides the transition from preliminary estimates to final data over a four-year cycle, through the acquisition of increasingly structured and comprehensive sources and more detailed information. The policy adopted provides for the possibility of revising previously published estimates for the last available year (in this case, 2022) and the three preceding years (i.e. from 2019 onwards).

In particular, the annual estimates of the National Accounts are released in March and September of each year (year t). In the first release in March, the annual estimates for the provisional year (t-1) and the preliminary estimates for the previous year (t-2) are based on the quarterly National Accounts characterised, by construction, by the use of cyclical information mainly of a sampling nature, with limited coverage of the universe of economic actors operating in the various production sectors.

For the compilation of these accounts, estimation procedures (quarterly and seasonal adjustment) based on linear forecasting models and linear and symmetric filters are used, which give quarterly estimates, especially at the end of the series and in periods marked by exceptional cyclical turbulence, a higher level of uncertainty. Moreover, these models are based on assumptions of invariance of certain characteristic ratios (such as the relationship between value added and output in volume). The stability of these ratios, which characterises periods of limited business cycle fluctuations, may not be verified in phases of exceptional economic contraction or expansion, such as in the years 2020-2021.

On the production system side, an acceleration in business demography was observed during the 2020-2021 period, with high birth and death rates of production units, especially smaller ones. In addition, there have been reorganisation processes that have led to significant structural changes, aimed at improving efficiency, also through the containment of operating costs. In the absence of cyclical surveys on the structure of firms' intermediate costs, as well as of information on speculative behaviour by firms aimed at coping with periods of actual or expected inflationary turbulence (typically through policies of stockpiling raw materials and finished products), it may happen that the final estimates differ significantly from the preliminary ones.

The estimates of the annual National Accounts published in April² 2023 were affected by all the factors described above. The consolidation of information on companies' profit and loss accounts resulting from the availability of the Frame-SBS archive and the availability of timely demand-side sources allowed a more complete and granular reconstruction of the National Accounts for the year 2021³.

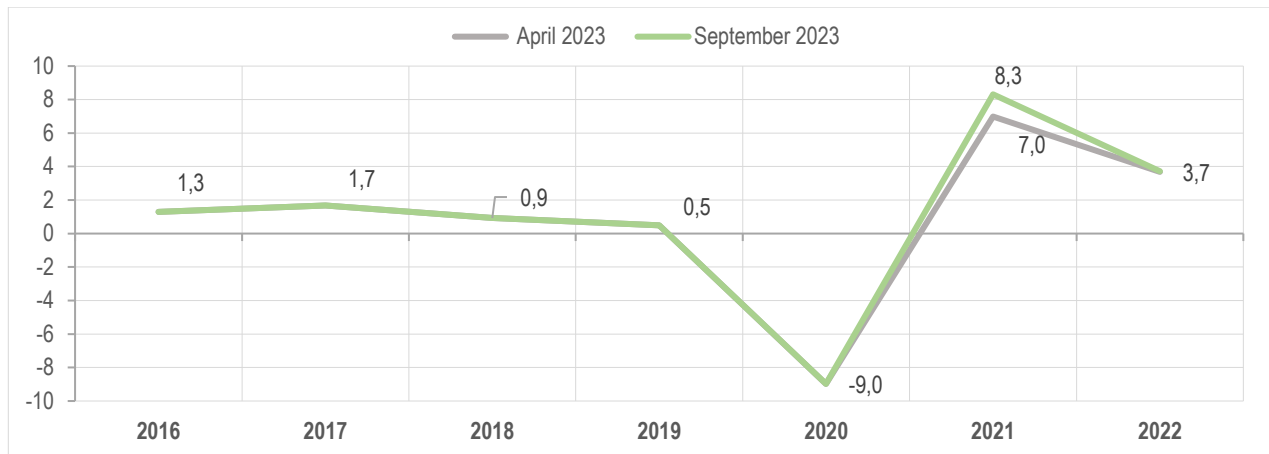
¹ Described in more detail in the Methodological Note attached to each press release about National Accounts aggregates.

² The estimates published on 1 March 2023 were updated on 5 April as a result of additional information that became available in March; in particular, a slight downward adjustment was made to tax credits to the energy sector. Compared to the previous press release, the update resulted in a decrease in General Government debt, which leaves the level of the debt-to-GDP ratio unchanged at 8%, and entailed minor adjustments to some items in the National Accounts, with no effect on the level of annual and quarterly GDP.

³ The construction of the national economic accounts in Italy follows an approach that integrates the estimation of the National Accounts aggregates and the supply and use tables (SUT). GDP is constructed from both the resource side (output and value added) and the use side (final consumption, gross investment and foreign demand). The basic information set available to the National Accounts allows, in particular, for independent estimates of GDP on the production and demand side. The aggregates are estimated by using numerous statistical sources characterised by varying degrees of detail, reliability and timeliness. The final estimates of the accounts result from a balancing process between supply and demand estimates. For the

The resulting revision for the year 2021 has therefore taken on an exceptional scope compared to the history of past revisions, while remaining ordinary in terms of timing and implementation (see Figure 1).

FIGURE 1. GDP CHANGE IN VOLUME. Years 2016-2022



Revisions in 2019-2020

In the National Accounts released on 22 September 2023 there was a slight upward revision for 2020, mainly induced by updates in the expenditure data of the General Government, which, however, left the GDP dynamics with respect to the previous year unchanged. The estimates of the aggregates for 2019 were unchanged.

Revisions in 2021

The 2021 GDP and National Income, on the other hand, underwent an exceptionally large revision compared to the April 2023 estimate. At current prices, the revision of GDP was EUR 34.7 billion, with an upward change in the growth rate from the previous year of 2.1 percentage points. The resulting revision of Gross National Income (to EUR 23.9 billion) also incorporated the new estimate of the balance of property income received from the Rest of the World.

At constant prices, the revision of GDP growth was 1.3 percentage points (see Figure 1), bringing the growth rate compared to 2020 to 8.3 per cent, from 7.0 per cent in April 2023.

The lower impact of the revision on GDP growth in volume, compared to nominal GDP growth, is due to the upward adjustment of the GDP deflator⁴ by 7 tenths of a point and the value added deflator by 1 percentage point.

As already mentioned, the exceptional magnitude of these revisions can be attributed to a more articulated and detailed estimation using an accurate and comprehensive information system. The National Accounts current estimates for the year 2021 are based on structural and comprehensive information on resident economic agents (enterprises, households, private and public institutions).

final year, National Accounts estimates are compiled for 98 branches of economic activity and 262 product groupings. For the provisional year, the level of disaggregation is much less: 45 branches of economic activity and 50 product groupings.

⁴ The deflation procedure of the National Accounts involves the purification of the price effect, at the highest available level of detail, of each individual aggregate within the complete scheme of supply and use tables. The volume estimates, obtained by deflation of the aggregates at current prices, are subject to a balancing procedure that ensures the consistency of the accounts between supply and demand, at the product level. For the provisional year, this estimation is conducted at a level of detail involving 45 branches of economic activity and 50 product groupings, while the final estimates are made at a much higher level of disaggregation (98 branches and 262 products): this results in greater reliability due to a more correct weighting of the elementary price indices.

In particular, for enterprises, the Frame-SBS database reconstructs the economic activity of the entire population of Italian enterprises, by integrating statistical and administrative sources. This makes it possible to estimate the value added of economic sectors more accurately on the basis of microeconomic information on the various components of production and of intermediate costs.

The important revision of the National Accounts for Italy was anticipated by similar situations in other European and non-European countries: the Netherlands revised upwards its GDP growth in volume for 2021 by 1.3 points, the United Kingdom by 1.1 points, Germany by 0.6 points, and Spain by 0.9 points. In contrast, France revised downwards by 0.4 points.

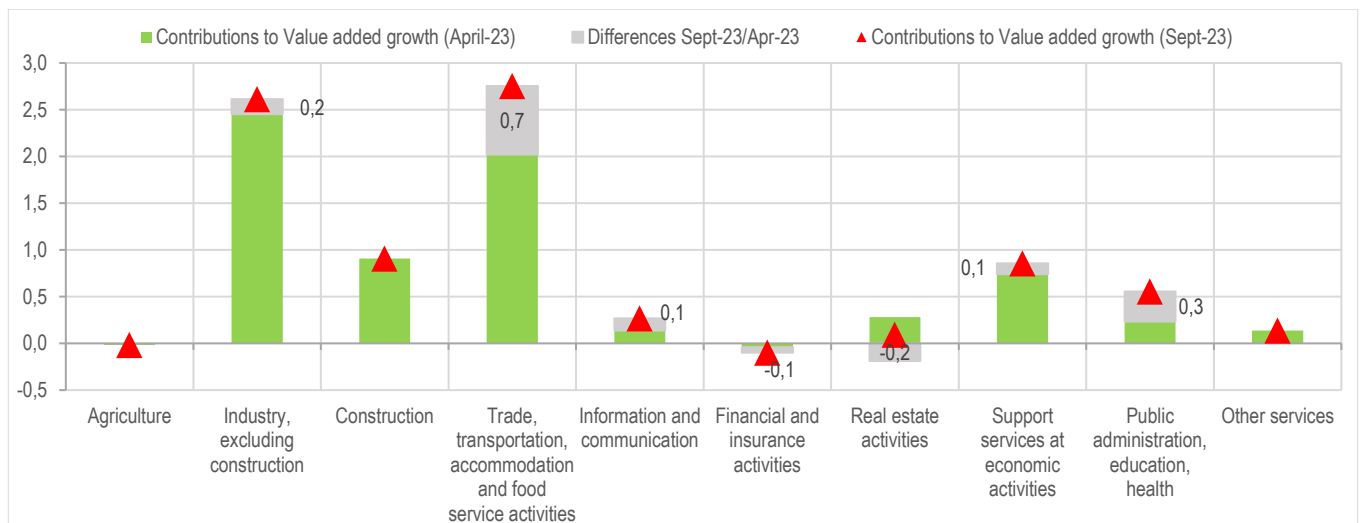
Revision of GDP on the production side

In the estimation of GDP on the production side, the value added of sectors of economic activity is determined by the difference between output and intermediate costs, both net of changes in stocks.

Compared to the estimate released in April 2023, the growth of value added in volume between 2020 and 2021 was revised upwards by 1.3 percentage points, as a result of a revision of 0.9 points of the dynamics of production and 0.6 points of intermediate costs.

The rate of change in value added was generally revised in all sectors of economic activity, with heterogeneous effects in terms of intensity and direction. However, upward revisions more than offset downward ones. Figure 2 shows the contribution to the revision of the 2021 rate of change in value added in volume by sector of economic activity.

FIGURE 2. CONTRIBUTIONS TO THE REVISION OF THE RATE OF CHANGE IN VALUE ADDED BY SECTOR OF ECONOMIC ACTIVITY. Year 2021



The Trade, Transport, Accommodation and Food Service sector contributed the most to the revision of value added (0.7 percentage points), followed by General Government, Healthcare and Education (0.3 points) and Industry excluding construction (0.2). By contrast, the Real Estate (-0.2 percentage points) and Financial Activities (-0.1 points) sectors made a negative contribution to the revision.

Revision of GDP on the expenditure side

Also on the demand side, the revisions are determined by a more articulated and detailed estimation using complete and updated information sources. In particular, for consumption, data on expenditure on recreational services from the SIAE source, on expenditure on medicines from the Observatory on the Use of Medicines (OsMed) source and on expenditure on hospital services from the Ministry of Health were acquired, in addition to updated data on education, transport services, hotel stays and motor vehicle registrations. For investments, data from the survey on building permits and the survey on business R&D were used.

The largest contribution to the revision of GDP growth in volume between 2020 and 2021 came from domestic demand (+0.8 percentage points). In particular, the components of expenditure by resident households and private social institutions serving households (NPISH) and gross fixed capital formation both contributed 0.4 percentage points to the GDP revision. The contribution of the change in inventories totaled 0.6 percentage points.

TABLE 1. CONTRIBUTIONS TO GDP GROWTH IN VOLUME. Year 2021

AGGREGATES	April 2023	September 2023	Differences
National demand (excluding changes in inventories)	6.3	7.1	0.8
- Final consumption expenditure	3.0	3.4	0.4
- Households final consumption expenditure and NPISH	2.7	3.1	0.4
- Government final consumption expenditure	0.3	0.3	0.0
- Gross fixed capital formation and acquisitions less disposals of valuables	3.3	3.7	0.4
Changes in inventories	0.4	1.0	0.6
External balance of goods and services	0.2	0.2	0.0
Gross domestic product at market prices	7.0	8.3	1.3

Upward revisions in the dynamics of investment were recorded, mainly due to the higher contribution of investment in construction (for the housing component) and in means of transport (see Figure 3), and in that of household final consumption expenditure (+0.5 percentage points), essentially driven by a stronger development of expenditure on services (see Figure 4). By contrast, the growth rate of exports was revised downwards by -0.1 percentage points, as was that of imports.

FIGURE 3. CONTRIBUTIONS TO THE CHANGE IN INVESTMENT BY ASSETS IN VOLUME. Year 2021

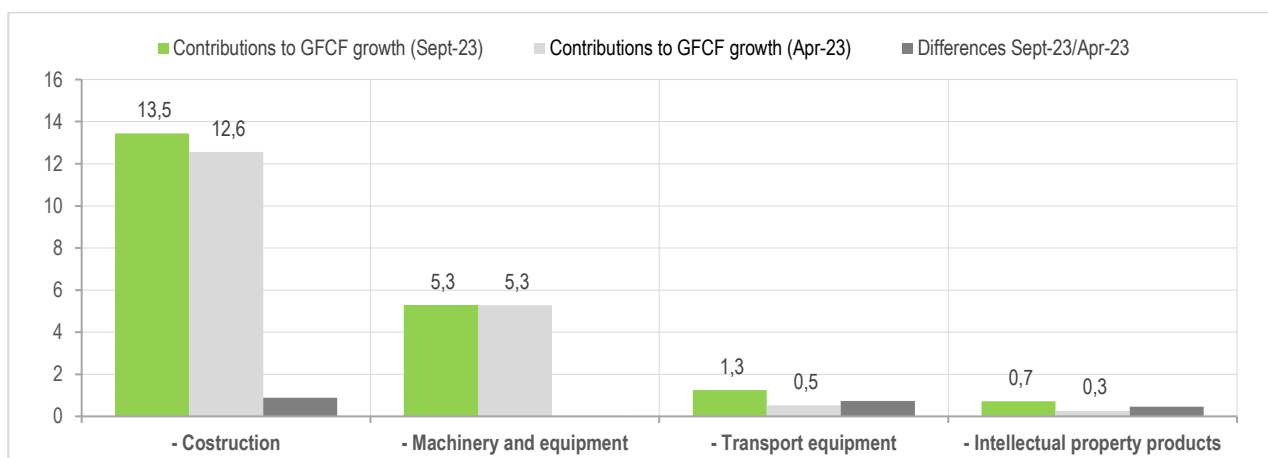
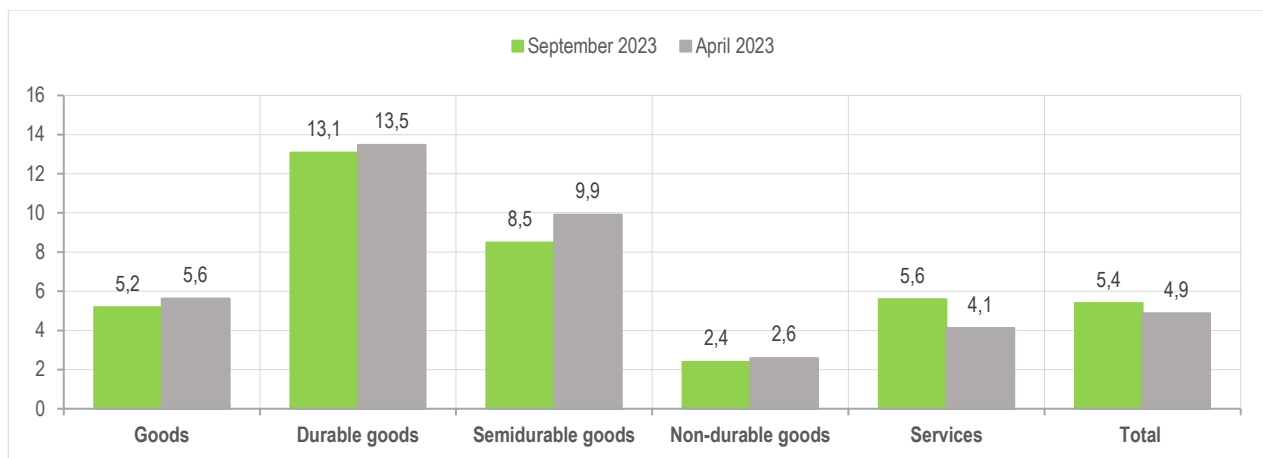


FIGURE 4. REVISION OF THE CHANGE IN HOUSEHOLD CONSUMPTION BY TYPE IN VOLUME. Year 2021



Revisions in 2022

For 2022, GDP at current prices was revised upwards by EUR +37.3 billion while the rate of change from the previous year remained unchanged. The revision of the GDP level for 2022, in fact, is substantially due to the carry-over effect of the revision in the year 2021. The 2022 estimate, being obtained as a change from the previous year, as it is essentially based on the results of the Quarterly Economic Accounts estimates, fully incorporates the level revision that occurred in 2021. It should be noted that the revision process of the 2022 accounts will end in September 2024, after two further revisions, the ordinary revision in March 2024 and the extraordinary 'benchmark' revision in September 2024, agreed with Eurostat (see below the section on The extraordinary revision of the National Accounts).

For the year 2022, the GDP growth rate in volume remained unchanged compared to last April's estimate. On the demand side, there are upward revisions in the dynamics of investments (from +9.4% to +9.7%), of GG expenditure (from +0.0% to +0.7%) and of household final consumption expenditure (from +4.6 to +5.0%). On the other hand, NPISH expenditure was revised downwards (-3.0 percentage points). Both import volume and export growth were revised upwards, by +0.6 and +0.5 percentage points respectively.

Forthcoming publications

The next releases of National Accounts estimates will be consistent with the values of the main aggregates of the national economy released today. According to the already established schedule, the next press releases will be as follows:

4 October 2023:

- Quarterly General Government Accounts, Household Income and Savings, and Corporate Profits (II Quarter 2023)
- Quarterly National Accounts (II Quarter 2023):

11 October 2023:

- National Accounts by institutional sector (Year 2022):

20 October 2023:

- Reporting of General Government Net Borrowing and Debt under the Maastricht Treaty (Years 2019-2022)

December 2023 (date to be defined):

- National territorial accounts (Years 2020-2022)

The extraordinary revision of the National Accounts

Extraordinary revisions are defined as revisions that occur as a result of methodological changes in the treatment of basic data, classification and/or definition of variables. In the case of the National Accounts, extraordinary revisions - coordinated at the European level and introduced every 5 years - affect the reference year of the new estimate at the level of the economic aggregates (called 'benchmark estimate') and concern the entire historical data series. By concentrating these important changes at specific points in time, it is possible to avoid frequent revisions of source and method that would produce structural changes in the time series, compromising the time consistency of the national accounts.

EU Member States will carry out the next extraordinary revision in 2024 (by the end of September). This revision will aim to introduce improvements in the measurement methods of specific components and variables, also resulting from the use of more up-to-date or, in some cases, entirely new information sources. In addition, it will have to take into account the changes to the transmission programme introduced by Regulation (EU) 2023/734 of the European Parliament and of the Council of 15 March 2023, which will enter into force on 1 September 2024. It is recalled that the last extraordinary revision of the National Accounts, aimed at updating and improving some components of the estimation process, was conducted in September 2019, in accordance with the recommendations at the European level. The previous complete redesign of the accounts had taken place in September 2014, when the ESA 2010 was adopted.

For technical and methodological information

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