statistics f!ash

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II quarter 2023

PRELIMINARY ESTIMATE OF GDP

- In the second quarter of 2023 the seasonally and calendar adjusted, chained volume measure of Gross Domestic Product (GDP) decreased by 0.3 per cent with respect to the previous quarter and increased by 0.6 per cent over the same quarter of previous year.
- The second quarter of 2023 has had three working days less than the previous quarter and one less than the second quarter of 2022.
- The quarter on quarter change is the result of a decrease of value added in both the sector of agriculture, forestry and fishing and in that of industry, in contrast to the growth in services. From the demand side, there is a negative contribution by the domestic component (gross of change in inventories) and a null contribution by the net export component.
- The carry-over annual GDP growth for 2023 is equal to 0.8%.

CHART 1. GROSS DOMESTIC PRODUCT, CHAIN-LINKED INDICES
Q1 2011 – Q2 2023, seasonally and calendar adjusted indices (reference year 2015)

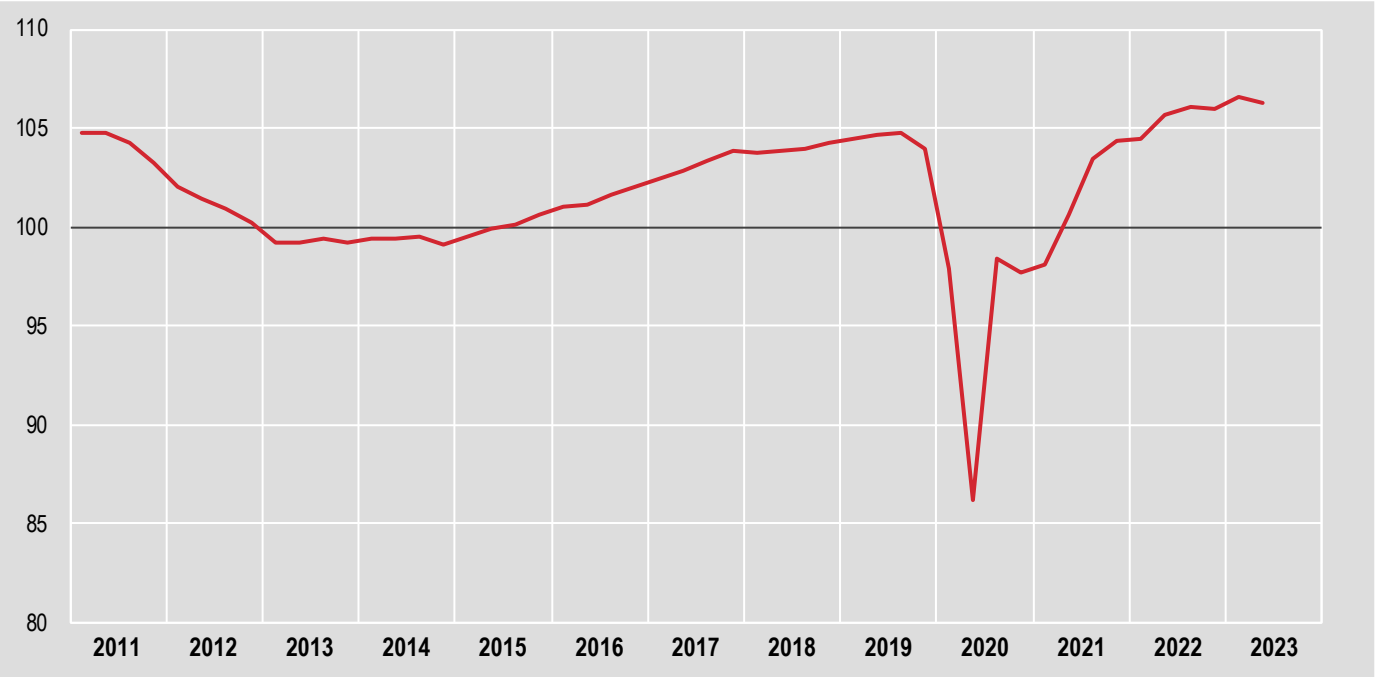

CHART 2. GROSS DOMESTIC PRODUCT, QUARTER ON PREVIOUS QUARTER AND ON SAME QUARTER A YEAR AGO PERCENTAGE CHANGES

Q1 2016 – Q2 2023, seasonally and calendar adjusted chain-linked values

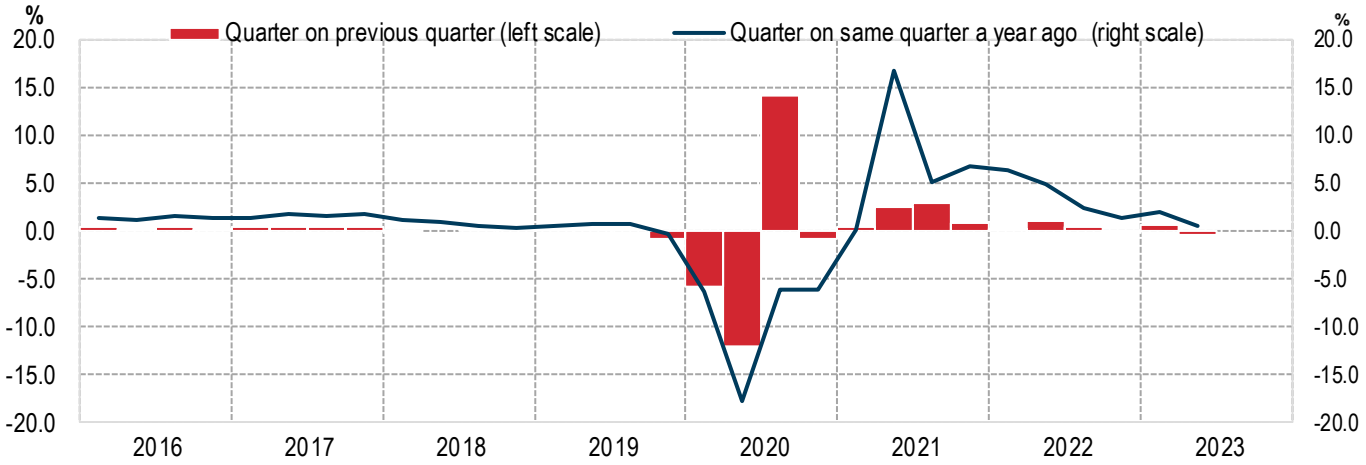

TABLE 1. GROSS DOMESTIC PRODUCT, CHAIN LINKED VALUES, QUARTER ON PREVIOUS QUARTER AND ON SAME QUARTER A YEAR AGO PERCENTAGE CHANGES

Q1 2019 – Q2 2023 (a), seasonally and calendar adjusted chain linked values in millions of euro (reference year 2015)

Quarter	Millions of Euro (chain-linked)	Quarter on previous quarter	Quarter on same quarter a year ago
2019 - I	432,138	+0.2	+0.6
2019 - II	433,163	+0.2	+0.8
2019 - III	433,429	+0.1	+0.8
2019 - IV	429,936	-0.8	-0.3
2020 - I	405,009	-5.8	-6.3
2020 - II	356,330	-12.0	-17.7
2020 - III	406,939	+14.2	-6.1
2020 - IV	404,055	-0.7	-6.0
2021 - I	405,904	+0.5	+0.2
2021 - II	416,047	+2.5	+16.8
2021 - III	428,069	+2.9	+5.2
2021 - IV	431,820	+0.9	+6.9
2022 - I	432,211	+0.1	+6.5
2022 - II	437,054	+1.1	+5.0
2022 - III	438,697	+0.4	+2.5
2022 - IV	438,232	-0.1	+1.5
2023 - I	440,961	+0.6	+2.0
2023 - II	439,458	-0.3	+0.6

(a) Data are provisional and subject to revisions.

According to the current revision policy, data released here are revised back starting from first quarter of 2019. Methods used for preliminary estimate of GDP are the same as those relative to the second round of estimation, when the full set of quarterly national accounts is published. Partial or total lack of short term indicators at the date of the preliminary estimate involves a larger use of statistical techniques of integration. Therefore, the preliminary estimates can be subject to larger revisions than the full set of quarterly accounts released at 60 days after the reference quarter.

TABLE 2. VINTAGES OF QUARTER ON PREVIOUS QUARTER PERCENTAGE CHANGES OF GDP IN LAST PRESS RELEASES

Percentage changes of seasonally and calendar adjusted chain linked values (reference year 2015)

QUARTERS	Today estimate	Quarterly national accounts of 31 May 2023	Quarterly national accounts of 28 April 2023	Quarterly national accounts of 5 April 2023
2019 - I	+0.2	+0.2	+0.2	+0.2
2019 - II	+0.2	+0.2	+0.2	+0.2
2019 - III	+0.1	+0.1	+0.1	+0.1
2019 - IV	-0.8	-0.8	-0.8	-0.8
2020 - I	-5.8	-5.8	-5.8	-5.8
2020 - II	-12.0	-12.0	-12.0	-12.1
2020 - III	+14.2	+14.2	+14.2	+14.3
2020 - IV	-0.7	-0.7	-0.7	-0.7
2021 - I	+0.5	+0.5	+0.5	+0.5
2021 - II	+2.5	+2.5	+2.5	+2.4
2021 - III	+2.9	+2.9	+2.9	+2.9
2021 - IV	+0.9	+0.9	+0.9	+0.9
2022 - I	+0.1	+0.1	+0.1	+0.1
2022 - II	+1.1	+1.0	+1.1	+1.0
2022 - III	+0.4	+0.4	+0.4	+0.4
2022 - IV	-0.1	-0.1	-0.1	-0.1
2023 - I	+0.6	+0.6	+0.5	
2023 - II	-0.3			

glossary

Calendar adjusted data: time series where the calendar effects due to number of working days, Easter holidays (that can fall in different quarters) and the leap year effects are removed in case they are significant.

Carry-over annual growth rate: annual growth rate under the assumption that the quarters of the year which have not been released yet perform a null growth (or in other words that the quarterly levels of GDP in that year remain at the same level as those in the last observed quarter).

Chain linked volume: measure of national accounts aggregates referred to data net of price movements. For each aggregate and each quarter from the second year on, a volume index is calculated as the ratio between its value at previous year prices and that at current prices referred to the average of previous year quarters. These volume indices are linked by multiplying (and dividing by 100) the consecutive indices starting from a value of 100 relative to the average of first year quarters (quarterly data of first year at current price standardized to an average of 100 and deflated by quarterly price indexes with base same year) and then shifting the base to the year taken as reference (currently 2015). The result is a chain-linked index that multiplied for the average of quarterly values at current prices of the reference year (and divided by 100) produces the chain-linked volume measure of the aggregate.

Contributions to GDP growth: brakedown of GDP growth in a given quarter by demand (or supply) components for which the the sum of contributions of each sub-component is equal to GDP growth.

Gross domestic product at market prices (Gdp): final outcome of the production activity of resident units. Sum of the values added by all activities producing goods and services, plus taxes less subsidies on products.

Price deflators: ratio of the nominal (or current-price) measure of an economic aggregate to the corresponding real (or chain linked value) measure. It points out the relative part of the nominal growth due to **Seasonal adjusted data:** time series where the effects due to seasonal fluctuations are removed. If not alternatively specified, seasonal adjusted data also include the removal of calendar effects. However, in quarterly national accounts we further specify “calendar adjusted data” when the effect is significant.

Quarter on quarter percent changes: changes registered with respect to previous quarter.

Quarter on same quarter a year ago percent changes: changes registered with respect to same quarter of previous year.

Value added at basic prices:.difference between output at basic prices and intermediate consumption at market prices. The basic price is the amount received by the producer from the sale of goods and services, net from taxes on products but including subsidies on products.

Preliminary estimate of quarterly GDP: introduction, regulatory framework

Preliminary estimate of quarterly GDP (Gross Domestic Product) derives from the estimation process of quarterly national accounts performed at short delay with respect to the end of the reference quarter, when the information relative to most recent quarter is still partial and therefore subject to a relatively high level of approximation. The estimation process is the same as that of quarterly national accounts computed under a full information dataset, but it adopts simplifying assumptions on extrapolations of some (monthly or quarterly) indicators used within the complete procedure. GDP estimate is the result of a process that considers the aggregates both at current prices, and in volume, as well as both demand and supply components (the latter expressed in terms of value added). However, notice that preliminary estimates and, in general, those relative to most recent quarters (i.e. before annual accounts have been set) are more robust when computed from the supply side and therefore GDP results from the sum of value added by industry of economic activity. The independent estimates computed from the demand side take the important function of double-checking for the overall coherence of the macroeconomic framework, but the sum of consumption, gross fixed capital formation and net exports when subtracted from GDP determines the aggregate "change of inventories and statistical discrepancies" in which the second component (i.e. discrepancies) prevails.

With preliminary estimates, the dissemination exclusively concerns GDP in chain-linked values with reference year 2015, since the estimates of underlying components are affected by high revision errors rendering them not informative to users.

In general quarterly national accounts adopt principles, definitions and structure of annual accounts, with few exceptions for the features which are typical of the quarterly time span of estimation. From the October 2014 edition on, methods and sources used in the estimate of quarterly national accounts follow the criteria defined by the European system of national and regional accounts (ESA 2010), that represent the application, at European level, of the system of national accounts (SNA 2008) by the United Nations. The methodological provisions established therein is embedded in a Regulation for member countries of the European union, ensuring comparability among estimates. ESA 2010 was adopted with Regulation (EU) No 549/2013 of the European Parliament and of the Council that provides a compulsory data transmission program. Concerning quarterly national accounts, the regulation foresees processing and transmission of data within 60 days from the end of the reference quarter, while the preliminary estimate – computed at 30 days (previously 45 days) - is not subject to regulation, but it is coordinated by Eurostat on the basis of a 'gentleman's agreement' among member states.

The elaboration is inserted in the National Statistical Programme (current edition: NSP 2020-2022 –updating 2021-2022) approved with Decree of the President of the Republic of 15 December 2022, published by the Official Journal of the Italian Republic - general series - No. 44 of 21 February 2023.

Data processing: framework, instruments and techniques

As mentioned above, preliminary GDP estimate is the result of a specific application of the general procedure of quarterly national accounts in conditions of partial availability of many short-term indicators, that assume an essential role in the estimation process. The methods adopted for quick processing (at 30 days from the end of the quarter) are, therefore, basically the same as those used in the construction of the complete set of estimates that follow at 60 days.

In general quarterly national accounts adopt an indirect method of compilation both for preliminary and final estimates on the basis of economic indicators that allow overcoming the limits imposed by reduced availability of direct measures. These methods consist of distributing annual accounts over quarters on the basis of the pattern of quarterly reference indicators. In particular, the technique adopted by Istat produces quarterly estimates on the basis of the relation - identified through an econometric method - between the specific annual accounts aggregate, and the value assumed in the same period by one or more suitable reference indicators. The method is used for estimation of quarterly data, both for periods referred to the past, i.e. when the annual value is already known and for extrapolation, i.e. when the annual information is not yet available. Estimation is carried out separately for all the aggregates defined within the compilation of the accounts.

In general, the series of quarterly national accounts are processed and issued both in unadjusted and adjusted form, where the adjustments concerns both calendar and seasonal effects. Moreover the measures are at current prices (millions of euros), at prices of previous year and in chain linked values with reference year 2015. The dissemination of preliminary estimates is limited to GDP in chain linked values seasonally and calendar adjusted. The series is available from the first quarter of 1996.

The adjustment procedure from calendar effects is based on a regression method, and takes into account the number of working days, Easter holidays and leap year effects. Both calendar and seasonal adjustment operates over the reference indicators, and it is performed applying the reg-Arima approach within the TRAMO-SEATS procedure (version of September 2017 for Linux).

For further details see the information note I Conti economici trimestrali. Principali elementi informativi of September 2015 (in Italian), that presents the indirect method of quarterly disaggregation, a selected list of the main indicators used in the estimates, a summary description of the main variables subject to estimation and the link between accounting schemes and short-term indicators. Moreover, the note outlines estimation methods for value added and double deflation, final uses, labour inputs, income, costs and margins indicators, and the revision policy currently adopted.

The major innovations introduced by the adoption of ESA 2010 are discussed in I conti trimestrali: innovazioni metodologiche e risultati (in Italian) relative to the presentation provided within the Istat seminar "Adoption of ESA 2010 and the general revision of national accounts" of December 2014.

Information used in the estimate

As shown above, the preliminary estimate of GDP is obtained using the same procedures adopted for the complete set of estimates relative to quarterly national accounts released at 60 days from the end of the reference period and further revisions.

For each aggregate to which the temporal disaggregation procedure is applied, one or more quarterly and/or monthly indicators are selected in order to reproduce the quarterly pattern of the aggregate. These indicators are the same in both the estimates at 30 and 60 days from the end of the quarter, but with a coverage that, in many cases, is significantly lower at the first deadline. For some of them, like producer and consumer price indices, data are fully available over the entire quarter at 30 days. In many other cases two monthly indices out of three are available at 30 days (see part of data of external trade or production in construction) and the third month requires to be extrapolated. Only for industrial production a preliminary estimate of data relative to the third month is carried out by Istat over incomplete information and without publication. Concerning quarterly indicators (e.g. turnover index of market services), data of the most recent quarter is not available at all and therefore requires to be fully extrapolated, by univariate time series models.

Revision policy

Istat adopts a revision policy for quarterly national accounts, that is completely aligned with the European recommendations regarding the cycle of ordinary revisions derived from the normal update of adopted indicators.

The case of extraordinary revisions is somewhat different, since they take place following wider modifications, and impact on the entire time series of estimates, as in the case of general revisions of national accounts carried out to incorporate improvements of sources and methods.

The informative sheet and revision calendar of quarterly national accounts available on the Istat website describes the timeline of ordinary revisions with respect to both reference period and type of estimate (in Italian). To sum up, with the preliminary estimate of GDP, data are reviewed from the first quarter of four years preceding the release date of the estimated quarter (http://www.istat.it/it/congiuntura/revisioni).

Coverage and territorial breakdown

The preliminary GDP estimates concern, by definition, only the entire national territory and are presented without any sector detail.

Timeliness

The preliminary estimate of GDP in chain-linked values is published at approximately 30 days from the end of the reference quarter, following a calendar coordinated at European level.

Dissemination

The time series of GDP in chain-linked values in excel format is attached to the quarterly press release, “Preliminary GDP estimate”.

The same series is released in the data warehouse I.Stat in the section "National accounts/Quarterly national accounts” when the press release is available on the website. IstatData is the new Istat’s data dissemination platform that will gradually replace the I.Stat data access system. Until the data transfer is completed, the two systems will coexist.

For technical and methodological information

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