Summary[*]

The war in Ukraine is impacting global economic conditions, ever more severely as hostilities continue. The prices of energy commodities have accelerated dramatically and have become even more volatile, fluctuating between the fears of a slowdown in demand and the shortage of supply. Inflation has spiked in many countries, reaching almost 10 per cent in the euro area in September. Central banks have reacted in order to keep expectations anchored. The International Monetary Fund (IMF) recently reduced its growth forecast for the world economy in 2023, lowering it to 2.7 per cent.

The Italian economy accelerated in the second quarter, partly thanks to the easing of restrictions imposed to combat the pandemic. However, the outlook is clouded by the rise in energy prices, which is beginning to spread downstream along the distribution chain. The rise in consumer prices is eroding purchasing power, despite the significant economic policy measures implemented to mitigate the impact. Employment growth stalled during the summer, but the unemployment rate continued to decline. Wage growth remains moderate overall, and the imbalance between labour supply and demand has not been eliminated.

Business and household sentiment is deteriorating, uncertainty is increasing and indicators are signalling a deterioration in current economic conditions. Based on the models of the Parliamentary Budget Office (PBO), GDP is expected to have contracted by a couple of tenths of a percentage point in the third quarter, but in the whole 2022 will increase by 3.3 per cent, slightly more than in the forecasts made by the PBO for the endorsement of the macroeconomic scenario of the Update to the Economic and Financial Document (the Update). Next year, growth is expected to slow sharply, with the Italian economy expanding by just three-tenths of a percentage point.

Over the past decade, wholesale gas prices have progressively diverged from oil prices, instead tracking the spot prices of natural gas. The latter have registered very steep increases this year, mainly due to the war, reaching values three times greater than those in 2021. According to analyses based on the model of the Italian economy used by the PBO, the shocks to the gas price have significant macroeconomic impacts, similar to those of oil. For instance, the increase in gas prices should subtract about 1 point from GDP growth of this year and, if it should persist over the next two years, would cumulatively have an impact of more than three percentage points.

[*] *Prepared by the Macroeconomic Analysis Department. Information updated to 18 October 2022.*

The international environment

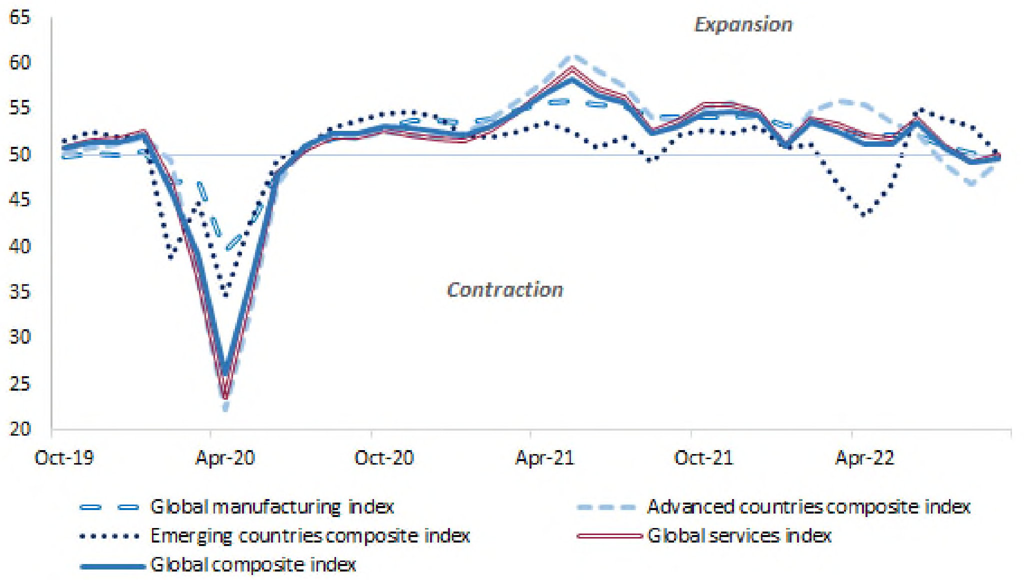
The conflict in Ukraine continues, with severe economic repercussions

After the rebound experienced in 2021, with the economic impact of the pandemic waning, the Russian invasion of Ukraine has since radically altered the global outlook with increasing severity as the duration of the conflict lengthens. The increase in the prices of energy commodities, which began with the recovery in 2021, accelerated dramatically after the outbreak of the war, with a major stagflationary impact. According to the most recent IMF forecasts, the expansion of world GDP this year should reach only 3.2 per cent, reflecting a particularly weak final quarter. Next year is also expected to start very shakily, and overall growth should slow to 2.7 per cent.

According to the Standard & Poor's Global survey of purchasing managers (Purchasing Managers' Index - PMI), global economic activity diminished in August and September (with the index at 49.3 and 49.7 respectively), the first such decline since the height of the pandemic. The advanced countries slowed the most, while the deceleration in the emerging markets appears to have been less pronounced (Figure 1).

In the first two quarters of the year, GDP in the United States contracted by six-tenths of a point compared with the last quarter of 2021. In the first quarter, economic activity was affected by the decline in the contribution of the public sector and the negative contribution of net exports, while in the second it was largely impacted by the contraction in private investment. In the same period, the euro area experienced an expansion (0.8 per cent on average for the two quarters), but expectations for the second half of the year point to a sharp deterioration in conditions.

Figure 1 – JP Morgan Global PMI (1)



Source: S&P Global.

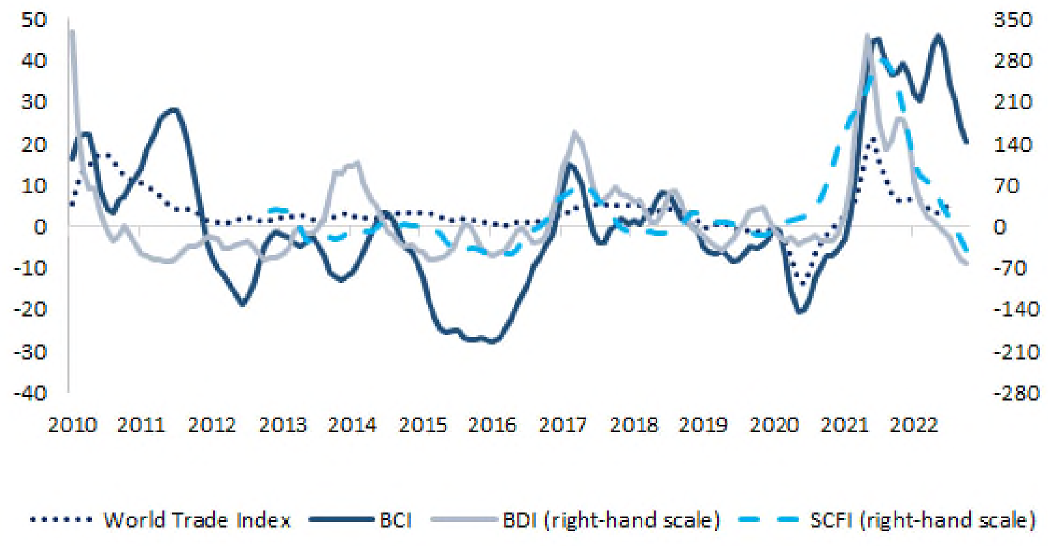
The stringent lockdowns imposed in China as part of its zero-COVID policy have heavily impacted GDP growth, which in the first half of the year increased by only 2.5 per cent year-on-year. More specifically, in the second quarter, strong growth in the primary sector was offset by the weakness of industry and the decline in services.

In the first seven months of the year, developments in international trade displayed a fluctuating pattern, recording four negative and three positive changes, with expectations of a weakening in the final part of the year. The slowdown in trade and the easing of restrictions aimed at containing the spread of COVID-19 are decreasing the pressure on supply chains and maritime transport cost indices are now declining on a year-on-year basis (Figure 2).

The recent forecasts of the International Monetary Fund

On 11 October, the International Monetary Fund published its new growth forecasts for the world economy, confirming them for this year but lowering the projections for 2023 from those estimated in July (Table 1). Three adverse forces are burdening the outlook: the war in Ukraine, the decline in purchasing power due to high inflation and the slowdown in China caused by frequent lockdowns and problems originating in the real estate sector. The forecast for trade was revised marginally upwards for this year, while expectations for next year were cut by 0.7 points (to 2.5 per cent). The forecast for consumer price inflation was again revised upwards, by about 0.5 percentage points for this year and 1 point for next year, for both the advanced and emerging countries.

Figure 2 – World trade, commodity prices and freight costs (1)
(annual percentage change in three-month moving average)



Source: based on data from CPB, Baltic Exchange, Shanghai Shipping Exchange and Refinitiv.
(1) BCI – Bloomberg Commodities Index; BDI – Baltic Dry Index; SCFI – Shanghai Containerized Freight Composite Index.

Table 1 – IMF forecasts

	WEO October 2022			Difference with WEO Update July 2022	
	2021	2022	2023	2022	2023
World GDP	6.0	3.2	2.7	0.0	-0.2
Advanced economies	*5.2*	*2.4*	*1.1*	*-0.1*	*-0.3*
United States	*5.7*	*1.6*	*1.0*	*-0.7*	*0.0*
Euro area	*5.2*	*3.1*	*0.5*	*0.5*	*-0.7*
Emerging economies	*6.6*	*3.7*	*3.7*	*0.1*	*-0.2*
China	*8.1*	*3.2*	*4.4*	*-0.1*	*-0.2*
World trade	10.1	4.3	2.5	0.2	-0.7

Source: International Monetary Fund (2022), World Economic Outlook, October.

Commodity markets are highly volatile

Commodity prices have become more volatile since the start of the conflict in Ukraine, alternating between periods in which signs of a slowdown in demand prevail and others in which fears of supply shortages dominate. The prices of unprocessed food continue to rise on an annual basis, although at a slower pace than the peaks reached at the end of March (12 per cent at 10 October), while the trend for metals prices has been negative since the end of June. Regarding energy goods, which are at the centre of the tensions engendered by the conflict, oil and gas prices (Figure 3) have developed along different paths. The price of gas has undergone substantial fluctuations, caused by the discontinuity in Russian supplies and fears of insufficient stocks for the winter.

Figure 3 – Oil and gas prices and dollar/euro exchange rate

Source: Refinitiv.

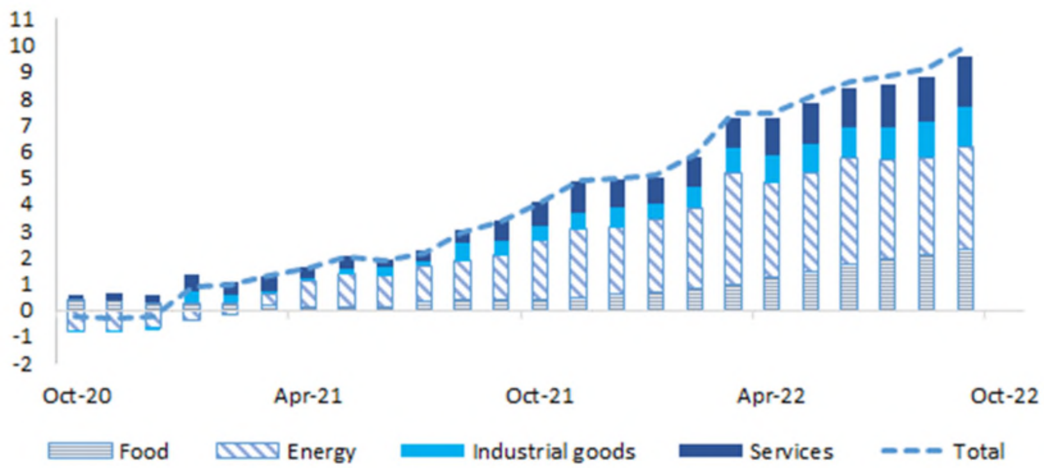
In the first half of October, with the achievement of the storage target by many European countries, the price of gas on the TTF market returned to well below €150 per MWh. At the same time, despite the decision by the OPEC+ countries to cut production by 2 million barrels per day[2] starting in November, oil prices have returned to below $90 per barrel.

The euro continues to depreciate against the dollar, which is benefitting from purchases driven by both the higher yields on offer and the lower perceived risk of the dollar as a safe haven currency. After having fluctuated around parity between the end of August and mid-September, the dollar-euro exchange rate is now stably below 1 and averaged 0.98 in the first ten days of October.

Inflation continues to rise in the euro area, but market expectations are anchored

Last year, European inflation began a slow but progressive rise, driven in part by difficulties in the supply of raw materials and semi-finished products and further boosted by the outbreak of the war in Ukraine. From 2 per cent in July 2021 it approached 10 per cent last September (Figure 4). Much of the increase reflects the developments in energy and food prices, while the less volatile components appear more stable. However, feedback effects are beginning to manifest themselves, as core inflation has reached 4.8 per cent. In the United States, inflation registered its third consecutive decline in September, but remains high at 8.2 per cent. However, the expectations of financial market operators appear to be well anchored on both sides of the Atlantic and expected inflation at various horizons ranges between 2.0 and 2.5 per cent (Figure 5).

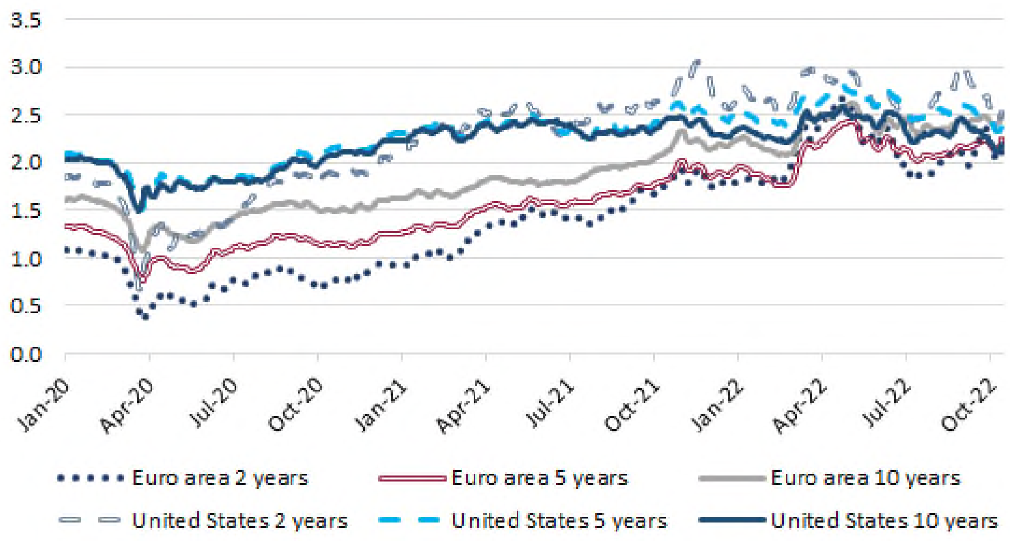
Figure 4 – Inflation in the euro area (1)
(year-on-year percentage change and contributions)



Source: based on Eurostat data.
(1) The sum of the contributions may not equal the change in the total index due to chain-linking and calculation using a greater level of detail.

2 Equal to about 2.0 per cent of world daily consumption.

Figure 5 – Inflation expectations implied in inflation swaps in the euro area and the United States
(percentage points)



Source: Refinitiv.

In September, first the European Central Bank (ECB) and then the Federal Reserve decided to raise their official rates further, both increasing them by 75 basis points in an effort to curb price increases and keep expectations stable. These increases, two for the ECB and five for the Federal Reserve, have brought their benchmark rates to 1.25 and 3.25 per cent respectively, still well below the current inflation rate.

The Italian economy

Full return to pre-pandemic values, especially at the nominal level

The Italian economy continued to expand in the first half of this year, benefiting partly from the gradual lifting of restrictions imposed on economic activity and personal mobility to combat COVID-19. According to the third edition of Istat's quarterly data, which were released at the beginning of the month, in the second quarter GDP increased by 1.1 per cent on the previous period and by 5.0 per cent on the corresponding period of 2021. The GDP growth acquired for 2022 in volume terms is equal to 3.6 per cent, corresponding to an upward revision of one-tenth of a percentage point compared with the quarterly accounts released at the beginning of September. In nominal terms, the carry-over in economic output is 7.1 per cent, bringing GDP in value terms significantly above the level registered prior to the pandemic (Figure 6). Compared with the previous period, all the main aggregates of domestic demand showed gains. On the supply side, quarterly increases were recorded for value added in industry and services, while that in agriculture declined.

Inflation impacts household spending and saving

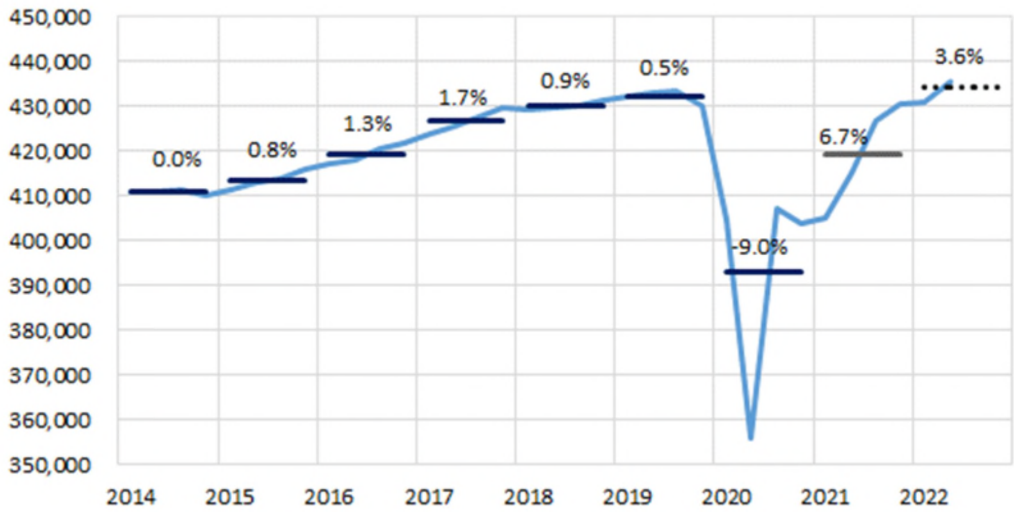
Compared with the end of 2021, in the first two quarters of this year, the growth in household consumption was virtually in line with that in economic activity (1.1 and 1.2 per cent, respectively). The decline recorded in January-March as a whole (-1.5 per cent on the previous quarter) was more than offset by the jump in the spring months (2.6 per cent), fuelled by all components except non-durable goods. Deferrable spending, therefore, appears to reflect the initial effects of the change in inflationary conditions, which are beginning to show signs of persistence.

The increase in household spending in the second quarter has occurred despite the stability of the purchasing power. The increase in disposable income in nominal terms was almost entirely eroded by the rise in prices, although this increase was mitigated by the support measures deployed by the Government. The propensity to save contracted to 9.3 per cent of disposable income (from 11.6 per cent in the first quarter), the lowest figure since the end of 2020 (Figure 7).

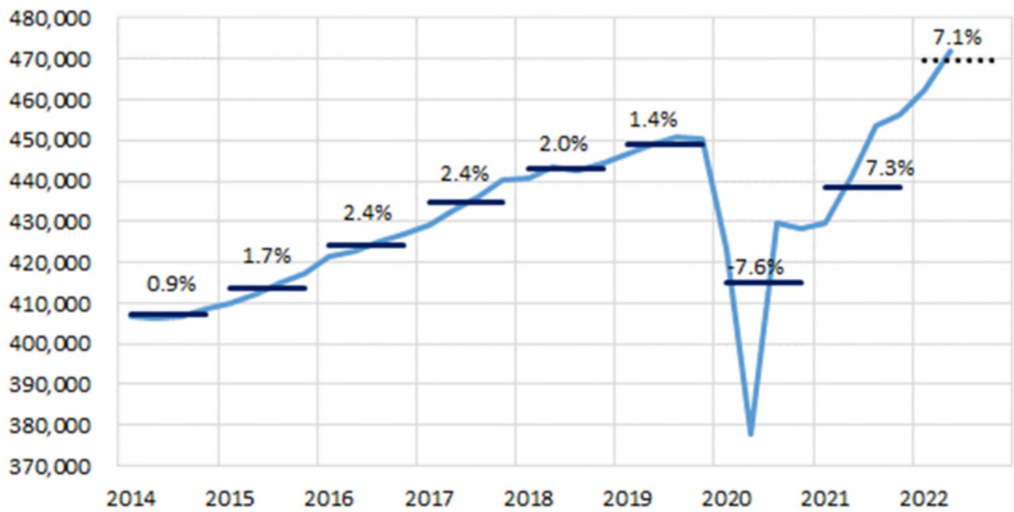
Confcommercio's consumption indicator (expressed in volume terms and seasonally adjusted) decreased in the summer quarter by more than 1 percentage point compared with the previous quarter, mainly due to a decline in spending on goods. Similar signs come from retail sales as recorded by Istat, which fell in volume terms, while the change in nominal terms compared with the April-June quarter was significantly positive. Consumer confidence has deteriorated progressively since the second half of last year, especially after the start of the conflict in Ukraine. During the summer months, the deterioration in household sentiment mainly reflected views of general economic conditions and expectations.

Figure 6 – Real and nominal GDP in Italy (1)
(millions of euros and annual growth rates)

Chain-linked values, 2015 base year

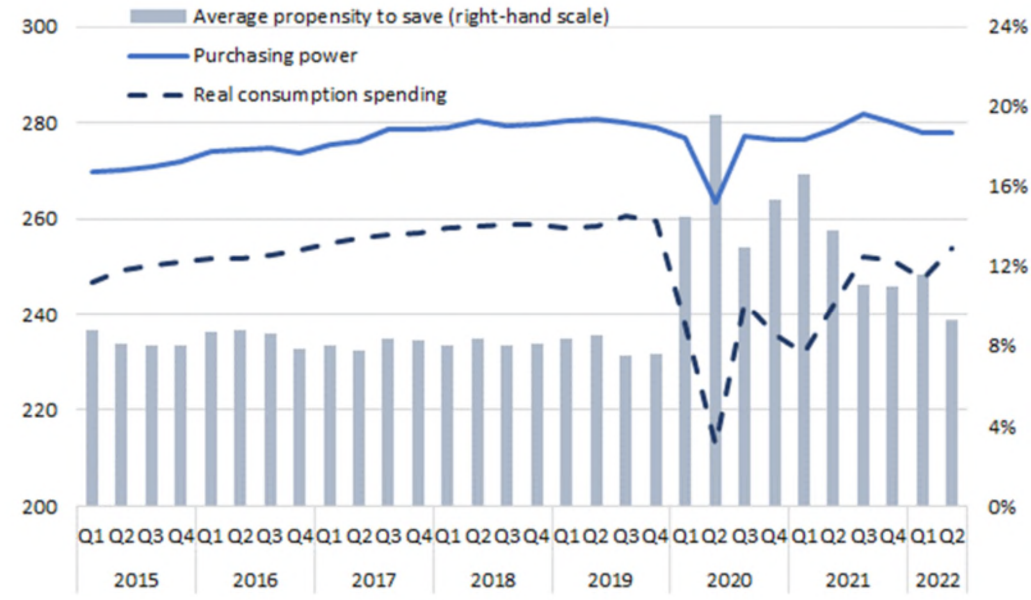


Nominal values



Source: Istat.
(1) The continuous lines indicate the quarterly level of GDP, while the horizontal line segments indicate the annual average (for 2022, the dotted lines indicate the annual growth rate acquired as of the second quarter).

Figure 7 – Household purchasing power, consumption and saving
(billions of euros, chain-linked values, 2015 and percentage shares)



Source: Istat.

Capital accumulation begins to slow

After the exceptional growth in investment that characterised 2021 and early 2022 (a period in which average quarterly growth rates exceeded three percentage points), in April-June, the pace of growth of capital accumulation amounted to 1.1 per cent. The quarter-on-quarter deceleration mainly reflected less buoyant activity in the construction industry. The volume of total investment in the spring was more than seventeen percentage points higher than before the pandemic (fourth quarter of 2019), thanks to the jump in construction expenditure (26.4 per cent) and, to a lesser extent, that in spending on plant and machinery (20.5 per cent), despite the sharp decline in expenditure on transportation equipment (-15.0 per cent).

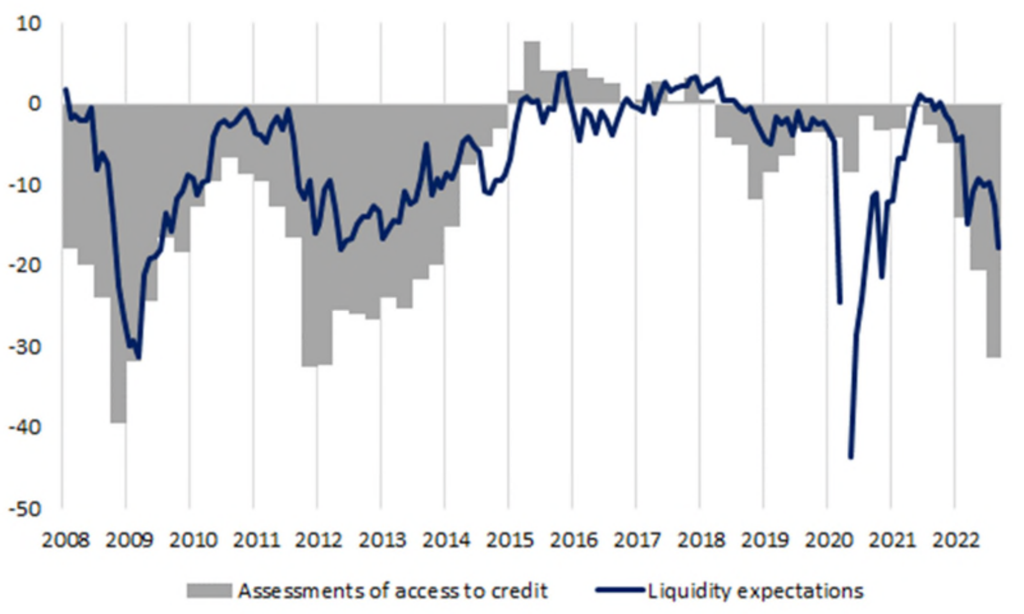
The investment rate (the ratio of gross fixed capital formation to value added) stood at historically high values in the spring, reaching 25.0 per cent in the second quarter. Profitability (measured as the ratio of gross operating profit to value added at basic prices for non-financial corporations) stabilised at 39.6 per cent after a period of contraction that began at the end of 2019 (when the ratio was 43.1 per cent). The deterioration in profitability despite economic policy measures to support liquidity and limited wage pressures mainly reflected the sharp increases in the costs of raw materials in general, not just energy.

The Bank of Italy Survey on Inflation and Growth Expectations conducted between August and September signalled a further deterioration in assessments of the general economic situation. Compared with previous surveys, short-term expectations for operating conditions deteriorated in reflection of the growing uncertainty associated with economic and political factors, developments in the prices of energy and other commodities and tensions in international trade. The weakening of investment in the short term is also signalled by the gradual decline during the year of domestic orders for capital goods and the pronounced tightening of lending conditions (Figure 8).

Exports continue to sustain economic activity

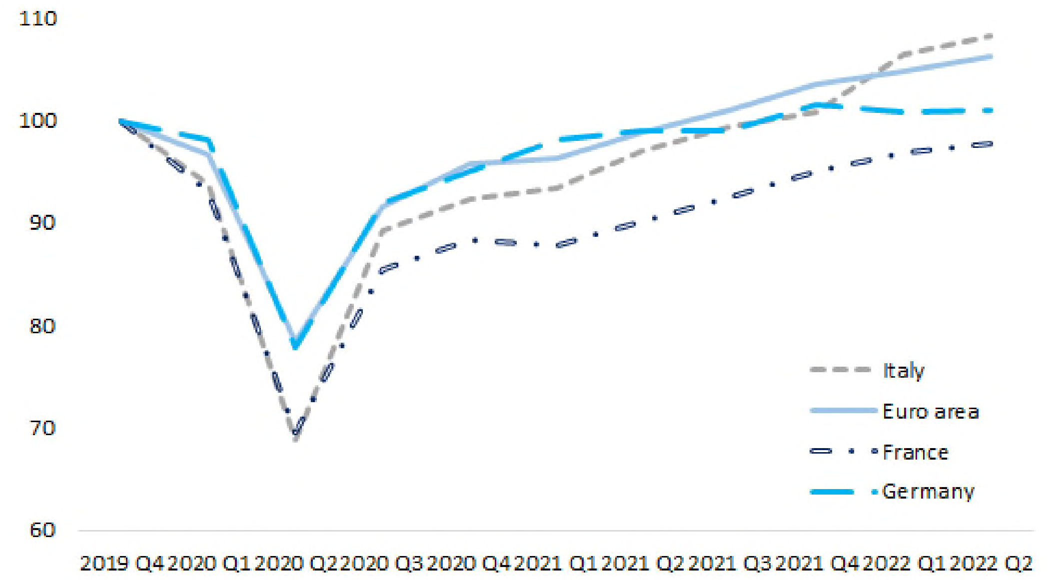
According to the most recent Istat data, the volume of exports of goods and services grew in the second quarter by 1.6 per cent on the previous one, also benefiting from the steady depreciation of the euro on international markets. Overall, in the first half of the year, the expansion of Italian sales abroad (over seven percentage points) was much greater than that registered by the euro area as a whole (2.5 per cent) and by its two largest countries (2.7 per cent and -0.4 per cent in France and Germany, respectively; Figure 9), thanks to the strong performance of merchandise exports. By product type, energy goods and equipment have made the largest contribution to exports, especially toward countries outside the European Union.

Figure 8 – Assessments of credit conditions in manufacturing and liquidity expectations
(difference between percentage shares of positive and negative responses)



Source: Istat.

Figure 9 – Total exports of the euro area and its largest economies
(index; 2019Q4=100)



Source: based on Eurostat data.

The most recent information appears uncertain. Despite the slippage in August, exports increased in value terms by 2.6 per cent in the summer compared with the second quarter, thanks to the strong performance of both sales to non-EU and EU markets. In the same period, exports in volume terms (obtained by deflating with producer prices on foreign markets) also increased, albeit to a smaller extent (1.2 per cent). However, surveys point to a weakening in the short term: assessments of foreign orders worsened further last quarter, reflecting the slowdown in demand in the primary destination markets.

Imports increased by 2.0 per cent in April-June compared with the first quarter, driven by the continuation of the expansion in capital accumulation and sales abroad. The greater increase in imports compared with that in exports made a negative contribution to GDP growth in the second quarter (-0.1 percentage points), in contrast to developments in the first three months of the year, when they made an average positive contribution of about two-tenths of a percentage point.

Recent sectoral indicators

The available sectoral indicators point to a progressive weakening of economic activity over the course of the year, mainly reflecting the direct and indirect consequences of the war in Ukraine.

After falling May-June, industrial production posted a slight increase in July (0.5 per cent on the previous period) and a more robust gain in August (2.3 per cent). The growth acquired for the third quarter is 0.3 per cent. The index is about 3.9 percentage points higher than its level immediately preceding the pandemic (February 2020), but the most recent surveys of firms reveal an unfavourable outlook. In September the PMI for the manufacturing sector remained below the threshold, separating expansion from contraction for the third consecutive month, reflecting tensions in the availability of materials and production costs. In the same month, the Istat confidence index for the sector continued to decline, falling to just above the level registered at the beginning of 2021.

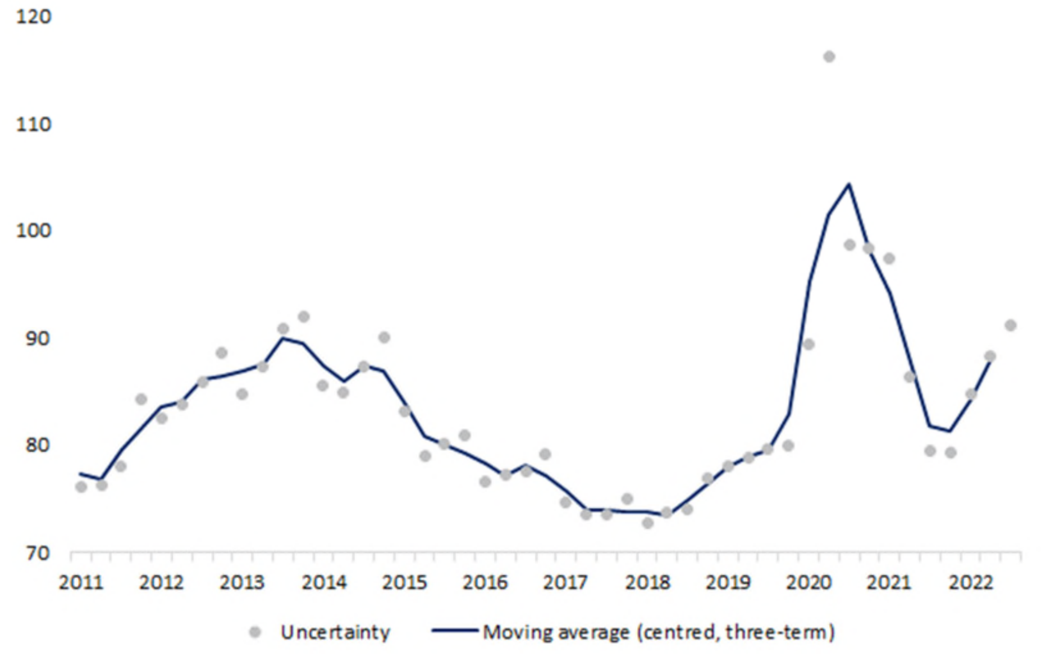
After having strengthened markedly in 2021 and in the first half of this year, output in construction decreased in July for the fourth month in a row (-3.0 per cent on the previous period), approaching the level of activity recorded at the end of last year. The housing market survey conducted by the Revenue Agency, the Bank of Italy and Tecnoborsa between June and July found that housing prices were stable compared with the previous survey, while demand conditions had deteriorated. However, the confidence climate in construction remains close to historical highs.

Value added in the services sector increased by 1.1 per cent in the second quarter compared with the previous quarter, benefiting from the gradual elimination of the restrictions on economic activity and mobility. However, recent indicators point to a weakening in the short term. In July-September, the average PMI for the sector was just below the threshold separating expansion from contraction, and confidence indices deteriorated further.

Overall, the aggregate index of business confidence, obtained as the weighted average of Istat’s sectoral indices, registered a pronounced decline in the third quarter compared with the previous three months average. In the summer months, the uncertainty of households and firms as measured by the indicator developed by the PBO increased again, reaching levels close to those seen during the sovereign debt crisis of 2012-2013 (Figure 10).

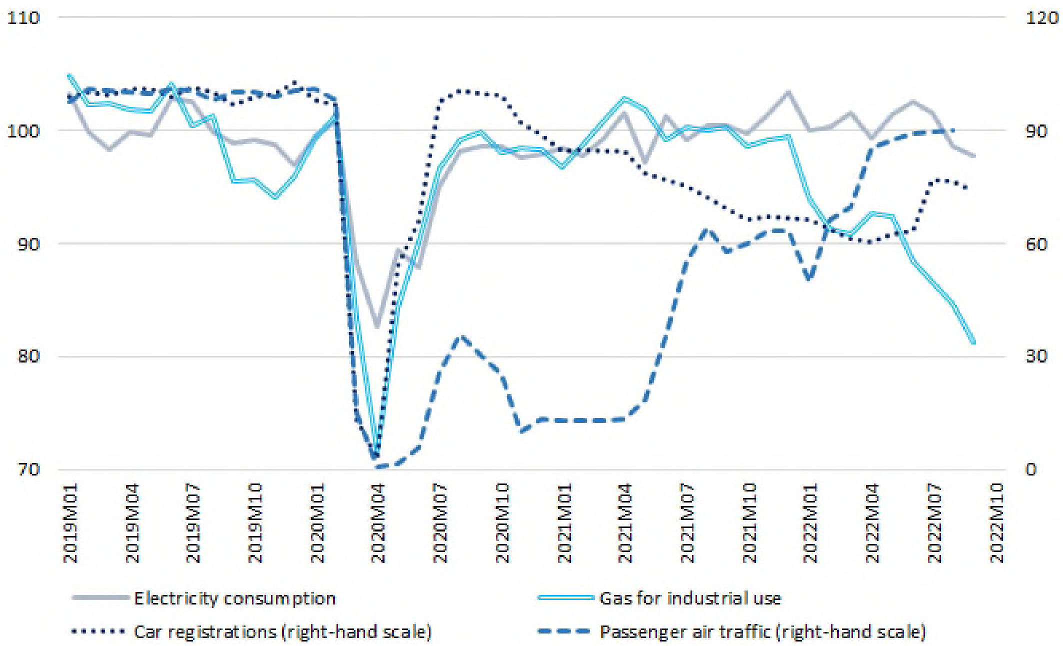
The timeliest monthly variables indicate a deterioration in current economic conditions (Figure 11). In July-September, electricity consumption slumped sharply in seasonally adjusted terms, reaching levels close to those seen in mid-2020. The gas consumption for industrial uses also continued to decline, reflecting the lower level of industrial activity, which was partly attributable to price increases. By contrast, passenger air traffic continued to recover in August from the lows reached in the spring of 2020. Following a slight upturn in the spring, new car registrations fell in August-September, remaining well below the levels posted at the end of 2020, which also reflected delivery delays caused by supply bottlenecks.

Figure 10 – PBO indicator of uncertainty
(index; 1993 Q1=100)



Source: based on Istat data.
(1) The uncertainty index was presented in the PBO's Report on Recent Economic Developments of April 2017.

Figure 11 – Real-time indicators of economic activity
(index; 2019=100)



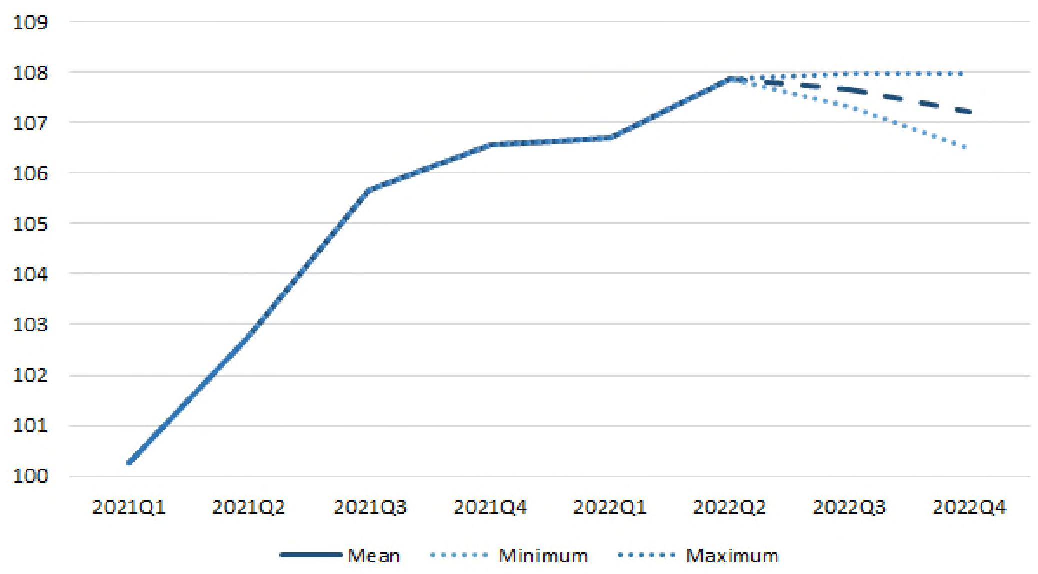
Source: based on data from ANFIA, Assareoporti, Terna and SNAM.

Short-term forecasts

According to PBO estimates, economic activity stagnated last quarter. GDP is estimated to have shrunk by 0.2 per cent, with the figure lying within a wide but balanced band of variation (between -0.5 and 0.1 per cent; Figure 12). The decline in output in industry and construction was offset by the resilience of services, although the latter are beginning to struggle with the rise in the cost of transport and recreational activities. The estimate of value added in the services sector is however highly uncertain, due to the lack of reliable real-time indicators for the sector. In the last quarter of this year, the dynamics of output could deteriorate further in reflection of the persistent consequences of the conflict in Ukraine and price strains.

Based on these estimates the annual GDP (which this year has fewer working days than in 2021) would increase by 3.3 per cent in 2022, as projected in the Update to the EFD. Compared with the forecast produced by the PBO in September, for the endorsement exercise of the Update, this represents an upward adjustment of two-tenths of a percentage point, half of which is attributable to the revision of the national accounts data published at the beginning of October. The expected contraction in the second half of the year produces a slightly negative statistical carry-over impact for GDP growth next year. According to the PBO's September forecasts, Italian GDP should expand by 0.3 per cent in 2023, slightly lower than that indicated in the trend scenario of the Update (0.6 per cent).

Figure 12 – Short-term GDP forecasts (1)
(levels; 2020 Q4=100)



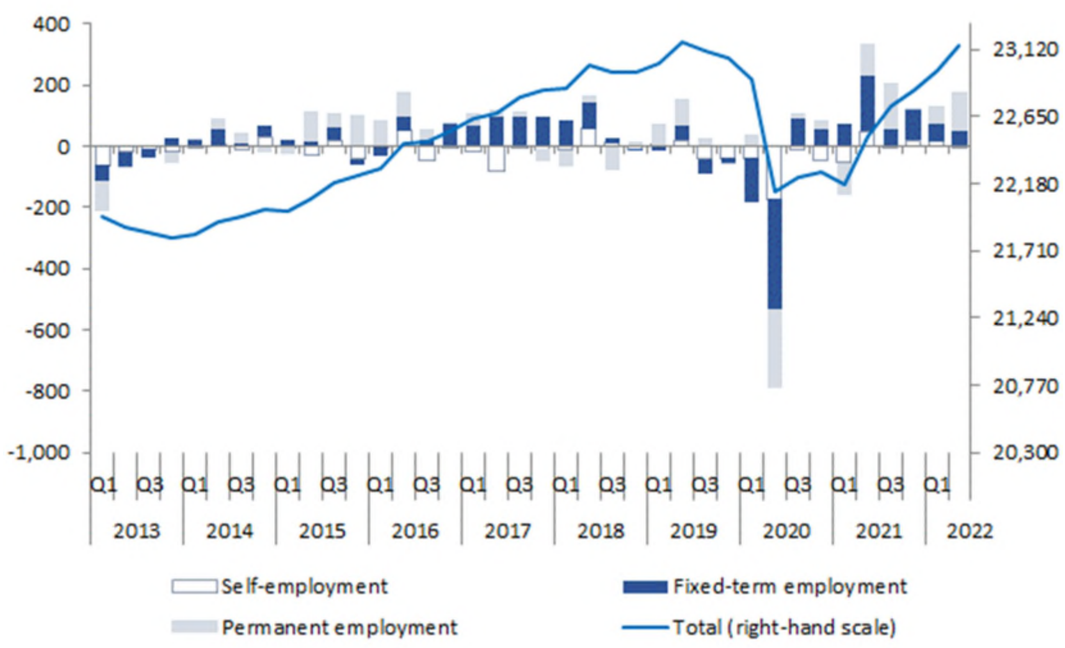
(1) The GDP forecasts are obtained using the PBO's short-term models (for more details, see Ufficio parlamentare di bilancio, (2018) "The PBO's macroeconomic forecasting tools"). – (2) The continuous line indicates historical data, while the dashed and dotted lines indicate PBO forecasts.

Employment stabilised during the summer while unemployment declines further

In the second quarter of this year the labour market benefited from the acceleration in output: hours worked increased by 0.9 per cent on the previous period, slightly lagging behind GDP. However, the growth in number of hours decelerated, sharply so in construction (to 2.4 per cent, from 3.6 in the first quarter) and marginally in services. By contrast, hours declined in industry excluding construction (-0.3 per cent), as higher energy costs and the scarcity of intermediate products might have prompted reductions in working hours. The increase in the number of persons in employment accelerated in the spring (to 0.8 per cent according to the quarterly Labour Force Survey; Figure 13), driven in particular by permanent jobs.

In July-August, employment growth substantially came to a halt, due in particular to the contraction in female employment (-0.2 per cent compared with the second quarter). The decline in payroll employment, entirely attributable to those on permanent contracts, was offset by a recovery in self-employment. Data from mandatory notifications of new hirings, terminations or contract transformations revealed a loss of momentum in job creation in the summer: in July-August the balance between new hires and terminations barely increased (approximately 33,000 more contracts in the non-agricultural private sector), as the contribution of fixed-term contracts was virtually nil. In the first eight months of the year, this component accounted for only 20 per cent of new positions, while in the same period of 2021 it accounted for 70 per cent.

Figure 13 – Payroll employment and self-employment
(absolute change on previous period; levels)

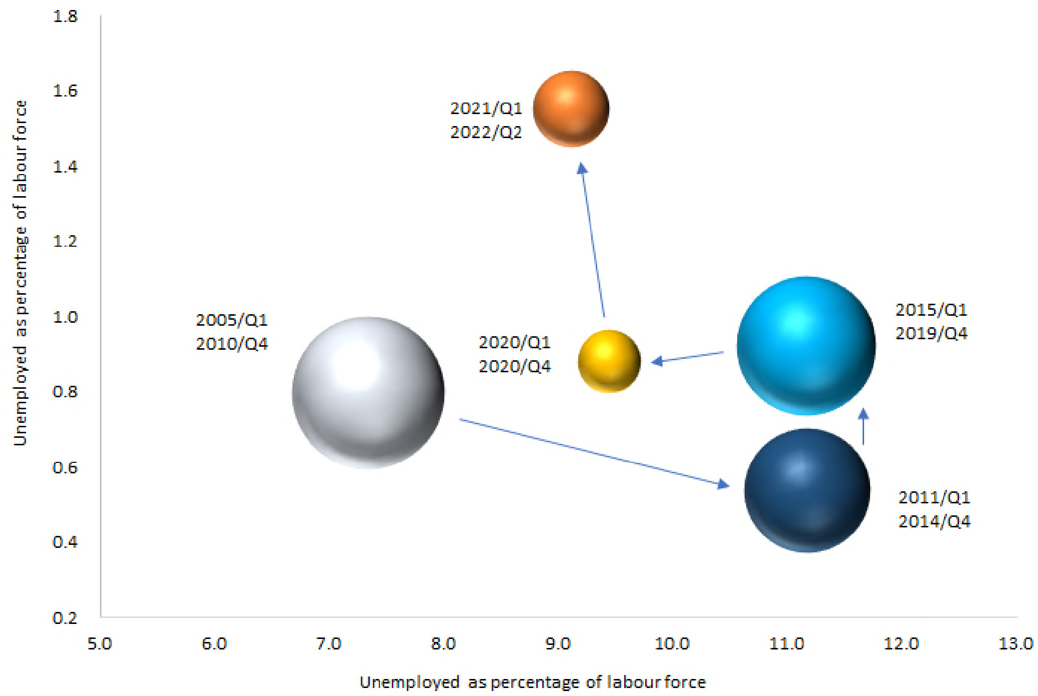


Source: Istat.

The use of wage supplementation programmes continues to decline. In the second quarter, requests for wage supplementation (CIG) benefits decreased by more than 25 per cent compared with the previous three months and the trend continued in July-August. An exception is represented by energy-intensive sectors,[3] for which the proportion of authorised hours (equal to almost 25.0 per cent of total CIG applications for the manufacturing sector) exceeded the average for the second quarter by more than 10 points.

In the spring, the unemployment rate decreased to 8.1 per cent, reflecting an increase in the employment rate (to 60.2 per cent, the highest level since 2004) that outpaced the rise in the activity rate. The decline in the number of job seekers has been accompanied by a still growing gap between labour supply and demand (Figure 14). Developments in the vacancy rate in the second quarter varied across sectors, holding steady in manufacturing and construction, but still rising sharply in services. According to preliminary monthly data, the unemployment rate continued to decline in the summer (to 7.8 per cent on average in the July-August period), but this was attributable solely to a decline in labour market participation.

Figure 14 – Unemployment and vacancies (1)
(average percentage values)



Source: based on Istat data.
(1) The size of the sphere is proportionate to the number of quarters in each sub-period, indicating the breadth of the period represented.

[3] Manufacture of paper and paper products; manufacture of coke and refined petroleum products; manufacture of chemicals and chemical products; manufacture of non-metallic mineral products, metallurgy.

Contractual wages, which rose slightly in the second quarter, accelerated in July-August (1.5 per cent), mainly driven by the public component (over 1 percentage point greater than in the previous three months). Taking account of the provisions contained in contracts in force until June, hourly wage growth would remain lower than that forecast for the HICP excluding imported energy (at 4.7 per cent for this year). According to Istat, contractual wages are expected to increase by 1.0 per cent in 2022 as a whole, up from previous estimates. Actual wages also accelerated (3.2 per cent year-on-year, about 1 point higher than in the previous three months) Taking account of the decline in hourly productivity, unit labour costs therefore rose by 3.9 per cent.

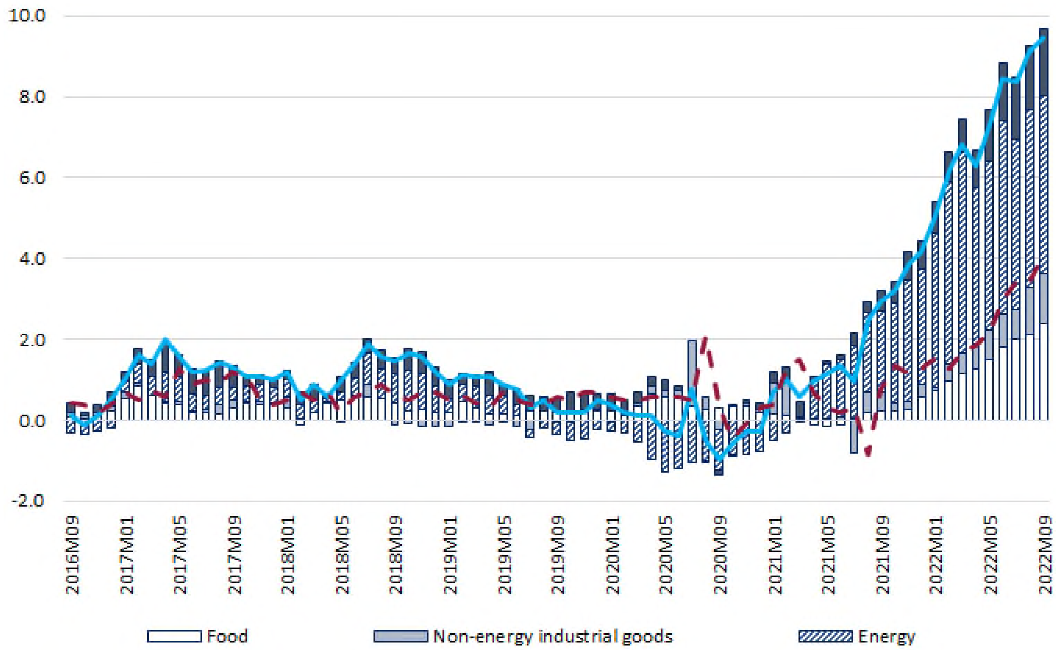
Inflation continues to rise and drives expectations

Inflation in Italy continues to be primarily fuelled by tensions in the energy markets, but the increases are spreading downstream along the distribution chain and are also impacting the less volatile items, with an ever greater impact on the "shopping basket" of items considered in the index. Inflation expectations recorded among Italian firms and households have started to rise again.

Inflation continues to rise. According to Istat data, in September the national consumer price index (NIC) recorded an increase of 8.9 per cent (from 8.4 in August). The harmonised European index, however, reached 9.4 per cent (Figure 15), about half a point below the euro-area average. Unlike in the recent past, when the increases were driven by the energy component, the monthly increase in September was mainly due to food prices (which accelerated to 11.4 per cent from 10.1 per cent in August) and recreational, cultural and personal care services (5.7 per cent year-on-year, from 4.6 per cent the previous month). The prices of energy goods have slowed slightly (44.5 per cent, from 44.9 per cent), but they certainly remain the main determinant of the high level of inflation. In September, the prices of goods in the shopping basket accelerated dramatically (i.e. food, household goods and personal care products, which posted an increase of 10.9 per cent, up from 9.6 per cent in August), a development not seen since the early eighties, with a presumably more significant impact on families with lower spending power, which allocate a greater share of their income to these types of products.

Inflationary pressures are spreading to the less volatile components of the index. Core inflation, which excludes the prices of energy and unprocessed food, reached 5.0 per cent, gaining more than half a point since August, driven in particular by increases in items associated with housing, water, electricity and fuel and hospitality and catering services. Overall, the core inflation acquired for 2022 (3.6 per cent) is about half of that of headline inflation (7.1 per cent). Based on the harmonised index at constant tax rates, inflation would have been at least 1 percentage point higher without the government measures implemented to limit the adverse impacts of energy price increases.

Figure 15 – Harmonised consumer price index and contributions of components (1
(percentage year-on-year change and contributions)



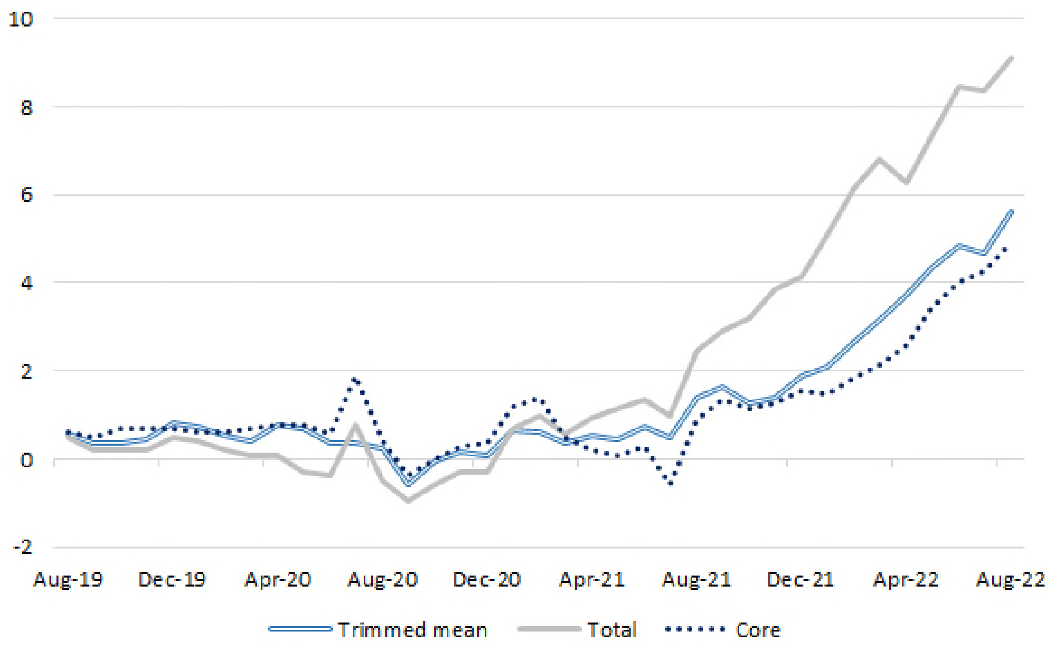
Source: based on Eurostat data.
(1) The chart shows the contribution to growth of the sectoral components of the harmonised consumer price index. The sum of the contributions may not equal the change in the total index due to chain-linking and calculation using a greater level of detail.

According to a PBO analysis, the household support measures activated by the Government between June 2021 and last September supported average household expenditure by about 3.2 percentage points. The measures also had a significant redistributive effect, as they largely mitigated (88 per cent) the impact of inflation on households with reduced spending capacity (first decile of the distribution of equivalent spending).[4]

Price increases are now widespread among the various categories, with almost 60 per cent of goods experiencing a price increase of more than 3 percentage points on an annual basis in August. Excluding expenditure items that have registered extreme variations (the lowest and highest 10 per cent of the distribution), trimmed-mean inflation is now approaching 6 per cent (Figure 16).[5]

[4] For more information, see Ufficio parlamentare di bilancio, (2022) Flash n. 2 "*Gli effetti distributivi dell'aumento dei prezzi e delle misure di sostegno in favore delle famiglie*".
[5] Trimmed measures of inflation are widely used by major central banks, but there is no consensus on the optimal degree of trimming. The European Central Bank does not systematically publish trimmed-mean inflation numbers, but has recently used a symmetric trim of 7.5 per cent. In its *Economic Outlook* of December 2021, the OECD also presented a comparison between countries that uses a symmetric cut of 10 per cent.

Figure 16 – Total inflation, core inflation and trimmed-mean inflation (1)

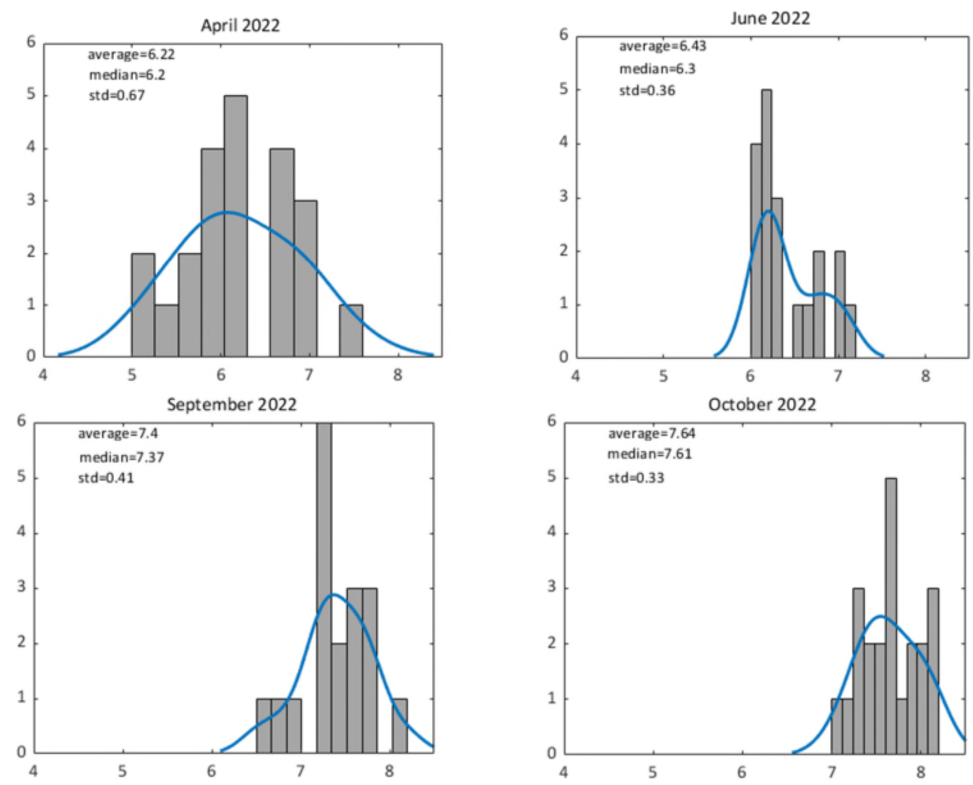


Source: based on Eurostat data.
(1) The trimmed mean is obtained by eliminating 10 per cent of the items (by weight) from both tails of the distribution of the harmonised inflation index (HICP).

The factors driving prices mainly originate upstream of the distribution process and outside Italy. The effects of the energy crisis and the difficulties in sourcing raw materials are further amplified by the weakness of the euro. Imported inflation, as measured by import prices, has fluctuated sharply since the beginning of 2022, remaining at around 20 per cent in July. Industry is most affected by these increases, with producer prices increasing by about 40 per cent in August, largely driven by the pressures of energy components on the internal market. Foreign pressures have also impacted domestic goods as a whole, but the effect has been mitigated by wage moderation and the compression of margins. In the second quarter the GDP deflator increased by 1.9 per cent year-on-year (from 1.0 per cent in the first quarter), with an acquired change of 1.7 per cent for 2022 as a whole.

Inflation expectations as measured in Istat surveys of firms and households have started to rise again, so much so that in September about half of all firms and consumers expect prices to rise in the coming months. The inflation expectations recorded in the third quarter in the Bank of Italy's Survey on Inflation and Growth Expectations among firms remain high, pointing to price increases of more than 6 per cent in 12 months. The Standard & Poor's Global PMI survey finds that cost pressures on manufacturing firms increased once again in September, reflecting the surge in energy and material costs, which are among the highest ever recorded. The inflation forecasts of private analysts have gradually shifted upwards since last spring, with a growing share of forecasts positioned in the upper extremities of the tail of the frequency distribution (Figure 17).

Figure 17 – Frequency distribution of inflation forecasts for Italy in 2022



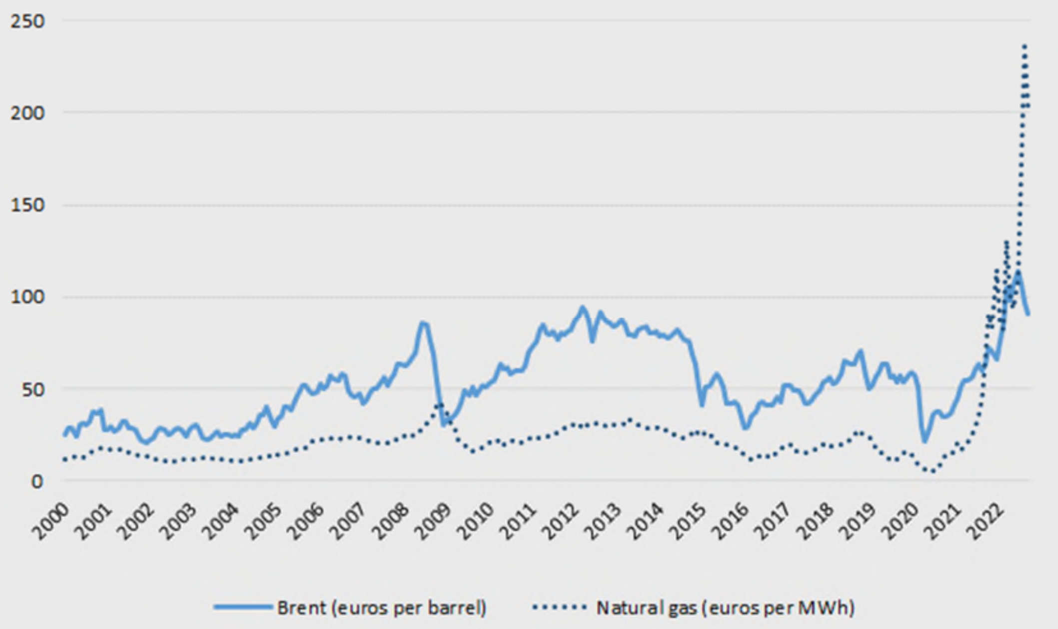
Source: based on Consensus Economics data.

Box – Gas price shock and macroeconomic impact for Italy

The outbreak of the conflict between Russia and Ukraine has revealed the weakness in Europe's gas supply strategy, as over the past decade, the continent has increased its dependence on Russian supplies by over 20 percentage points. The share of natural gas imported from the Russian Federation reached a peak in 2019 (over 45 per cent) before easing slightly in the two following years of the pandemic crisis.[6] Until 2021 the global market was characterised by an abundance of supply, attributable in part to the arrival of US shale gas, which had produced a steady price decline. In Europe, the gas price fell from an average of just over €21.3/MWh in 2010 to around €14.6 in 2019 (Figure B1).[7]

The recession induced by the pandemic sharply reduced the energy demand to the extent that in 2020 the gas price fell to around €10/MWh. With the recovery in 2021, prices began to rise again, buoyed in part by the acceleration of the energy transition. The price of natural gas rose from €17/MWh at the beginning of 2021 to around €80 in the days immediately preceding the Russian invasion of Ukraine. With the onset of hostilities at the end of February, the rise in the spot price of natural gas quoted on the Dutch virtual trading facility (TTF)[8] accelerated, reaching over €300/MWh when Russia sharply reduced flows to Europe in retaliation for the sanctions imposed by the European Union. The price increase was accompanied by a substantial increase in volatility, which rose by 15 times between 24 February and 30 September 2022 compared with the same period in 2010.[9]

Figure B1 – Oil and gas prices in Europe
(monthly average values)



Source: World Bank.

[6] International Energy Agency, *Gas Market Report* Q3 2022.
[7] The raw data are sourced from the World Bank. The price is expressed in dollars per million British thermal units (BTU). To convert into euros per MWh we used the dollar/euro exchange rate and a conversion factor of 3.41 MWh per million BTU.
[8] TTF stands for Title Transfer Facility, a virtual market based in the Netherlands that provides the benchmark price for the European natural gas market.
[9] The period average standard deviation calculated over a year was used a metric for volatility.

The strains on the gas market today have greater repercussions for consumer prices and economic activity than those recorded up to the early 2000s. At the time, the wholesale price of natural gas was mainly determined on the basis of long-term contracts linked to oil prices, with only a residual fraction indexed to the specific spot prices of natural gas. In the past decade, however, increased competition in the market and prolonged periods of relatively high oil prices have prompted many operators to renegotiate expired gas supply contracts, indexing them more extensively to spot natural gas prices. This has produced a growing misalignment with oil prices for many years, making it possible to achieve substantial advantages in reducing energy costs. Since last year, however, the anchoring of gas prices to quotations on the Dutch TTF market has generated huge costs for the European economies, which are excessively tied to a dominant operator who uses its position as a weapon of strategic pressure. Furthermore, the large and progressive decline in European gas production has made the continental system highly dependent on pipeline imports (86.5 per cent in 2021) and imports of liquefied natural gas (LNG), reducing the system's flexibility and ability to cope with seasonal fluctuations in demand. This has made storage management a decisive factor in ensuring that the needs of individual countries are met in periods of greatest consumption.

The strong link between the price of oil and gas meant that the use of this variable was redundant in macroeconometric models.[10] From 2021 these conditions no longer hold, and the PBO has deemed it necessary to modify the model it has adopted (MeMo-It, used under a framework agreement with Istat and modified over time to meet the specific requirements of the PBO), introducing the price of gas as an exogenous variable, measured by the price in euros/MWh of natural gas on the TTF market. To assess the macroeconomic impact in a standardised manner, we simulate a permanent shock of 10 per cent of the gas price and assess the impact over time on the main endogenous variables.

In the econometric model, the gas price increase is quickly transmitted to the import deflator and, through this, to domestic prices. The effect on the GDP deflator is approximately 0.1 percentage points in the year following the shock, with a peak in the fifth year (with a deviation of more than 0.2 percentage points from the baseline scenario). The response of the consumption deflator increases progressively, reaching a peak in the fourth year (with a deviation from the baseline scenario of over 0.25 percentage points; Figure B2). With regard to real growth, the gas price shock begins to trim GDP growth starting from the second year (0.1 percentage points below the baseline scenario), with the effect increasing until the fifth year (0.25 percentage points). The decline in investment is less pronounced than that in GDP in the initial years of the shock, converging in the fifth year (a decline of around 0.3 percentage points). Higher inflation depresses real disposable income. Private consumption falls more than GDP in the first year, while in subsequent periods, the elasticity is similar to that of output (about 0.2 percentage points in the sixth year; Figure B2). The deterioration in competitiveness holds back exports, although this channel may be overestimated, as no control is made of the impact of the gas price increase on the prices charged by foreign competitors. The deterioration in the terms of trade due to the sharp rise in import prices, however, causes a deterioration in the balance of payments of almost two-tenths of a point of GDP after five years.

Overall, the gas price multipliers appear to be in line with those of the oil price, with which they also share the transmission chain. However, caution is required in interpreting the elasticities of the macroeconometric model, as they represent an approximation of reality, and the real effects of the gas price increase could be stronger. First, the coefficients associated with the new variable in the import deflator equation are estimated based on historical data that include the period in which the relationship between the price of gas and the dependent variable was weak for the reasons noted above. Consideration should also be given to the fact that the substantially linear specification of the equations could neglect effects that occur only when strong price variations occur, as could happen with the reaction of household and firm expectations.

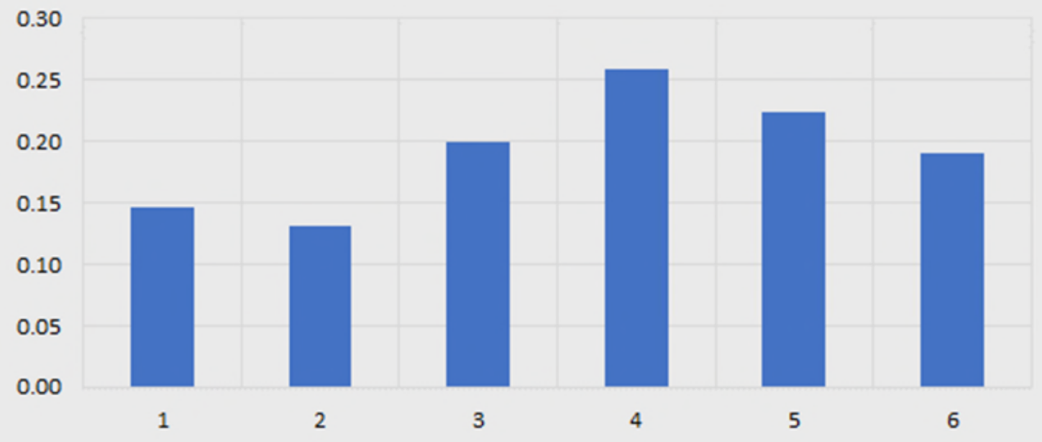
[10] Through multicollinearity with the price of oil or with the regression constant.

Furthermore, since the price of gas in Italy is strongly affected by the dynamics of the European energy market, an increase in the price will also affect the growth of various trading partners, amplifying the recessionary impact on the national economy. Finally, sharp gas price increases can also reflect tensions in supply, which can create the risk of rationing of supply, which is not considered in the econometric model.

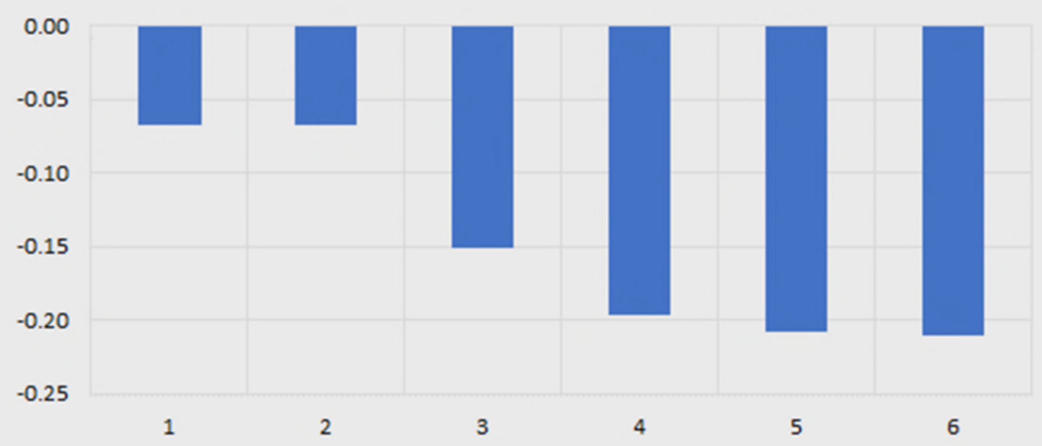
While taking account of these motives for caution, the multipliers of the model can be used to give an order of magnitude of the effects of gas price increases on the Italian economy. On the basis of the most recent prices on the TTF market, natural gas prices have tripled this year compared with 2021. Based on the elasticity of the model, this remarkable rise in prices has subtracted about one percentage point from GDP growth in 2022. Moreover, if gas prices remain at similar levels over the next two years (as foreshadowed by average forward prices for the period), GDP would be more than three percentage points lower in 2024 (three years after the shock). The impact on the variation of the household consumption deflator would be more rapid, as it would amount to almost three percentage points this year and about half a percentage point in each year of the following two years.

Figure B2 – Elasticity of the MeMo-It model to a permanent 10 per cent increase in the price of gas (1)
(percentage deviation from baseline scenario)

Household consumption deflator



Household consumption



(1) The years of the shock are given on the horizontal axis.