

# EY Italian Macroeconomic Bulletin

**N°2 | March 2023**

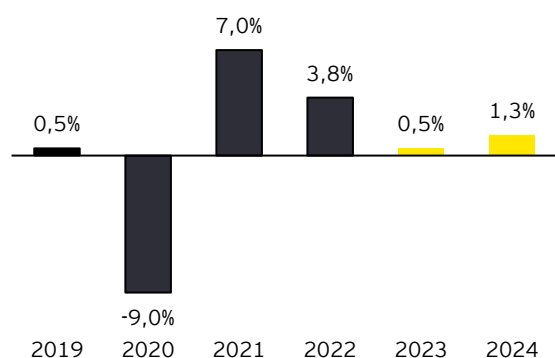
# Index

01. Executive summary	3
02. The Global scenario	4
03. The European framework	8
03.1 Prices, monetary policy, and the labour market	8
03.2 Short-term economic indicators	14
04. The Italian economy	16
04.1 Prices and the labour market	16
04.2 Focus: real wages and productivity in Italy	19
05. The Italian economy: GDP and EY forecasts	25
06. Assumptions behind the forecasts	30
07. Technical appendix	32

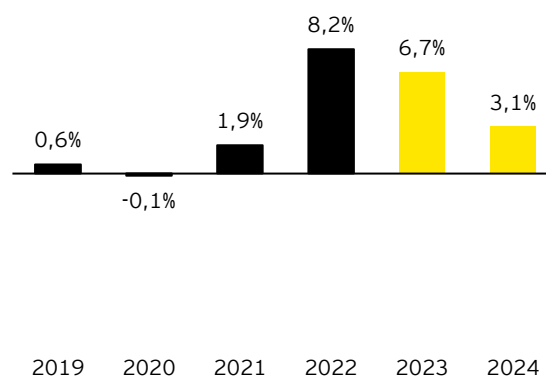
# Executive summary

- ▶ World growth is expected to slow in 2023 to 2.6%, after 3.2% in 2022, before accelerating again to 2.9% in 2024, still below the 2000-2019 average of 3.8% per year.
- ▶ Headline inflation is expected to decline to 6.6% in 2023 from 8.8% in 2022. However, this is still higher than the historical average of 2000-2019 (close to 4%). Lower inflation expectations are representative of lower energy prices, easing pressures on supply chains, and of powerful and coordinated action by global central banks.
- ▶ However, some components of inflation, especially in Europe, show strong persistence. In particular, core inflation, i.e., inflation excluding energy and unprocessed food prices, continues to rise. Higher inflationary pressure in the Eurozone could also stem from a possible increase in wages to compensate for the loss of households' purchasing power. This could lead to a prolonged tight monetary policy from the Fed and the ECB.
- ▶ High interest rates risk is generating pressure in the financial sector, as shown by the recent turbulence in the financial markets. Although these events do not directly affect Europe at the moment and appear to be isolated events, the economic consequences could also impact the Eurozone economies.
- ▶ High interest rates might result, first and foremost, in a constraint on real growth, discouraging consumption and investment of the private sector.
- ▶ EY forecasts point at a 0.5% real GDP growth for Italy in 2023 and 1.3% in 2024, while the inflation rate will fall from 6.7% in 2023 to 3.1% in 2024. Growth will be mainly driven by net exports and investments, also thanks to the strong impulse provided by the resources of the National Recovery and Resilience Plan (NRRP), while private consumption is expected to stay flat.
- ▶ These forecasts remain subject to a scenario of high uncertainty and thus present significant downside and upside risks, mainly related to the global macroeconomic environment and the implementation of the NRRP itself. Two simulations carried out with EY's model on possible scenarios of a partial utilization of the NRRP funds (in line with deviations of actual expenditure from the planned expenditure until 2022) foresee a low or negative real GDP growth in 2023.

Real GDP - % change, Italy



Consumer prices - % change, Italy



Source: ISTAT and forecasts from EY Italy's Macroeconometric Model, 'HEY-MoM' (see Technical Appendix for details). The yellow bars represent the forecast horizon.

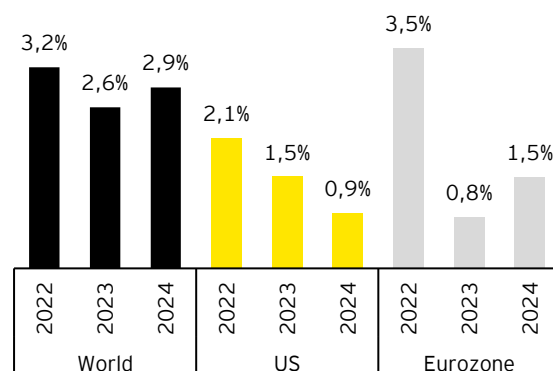
# The global scenario

According to the OECD, 2022 will close with an overall global growth of 3.2%,<sup>1</sup> a lower growth than the 4.5% forecast in December 2021,<sup>2</sup> i.e., before the Russian invasion of Ukraine (and the resulting global geopolitical tensions) and before the energy crisis experienced during the second half of the year. Although the global scenario remains extremely complex, world GDP is expected to grow by 2.6% in 2023, slightly up from what expected at the end of 2022 (2.2%), followed by a moderate acceleration in 2024 (2.9%).

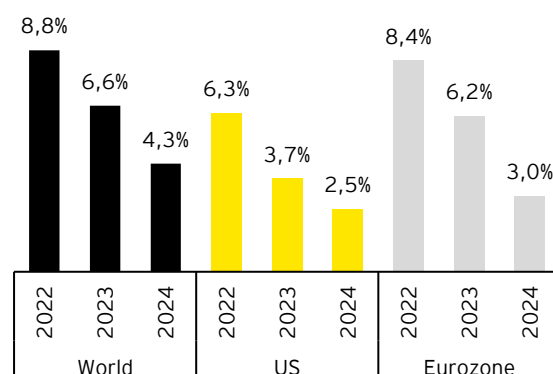
With reference to price dynamics, after the surge experienced in 2022 that led to a consumer price growth of 8.8% globally, inflation is expected to fall in 2023 and 2024 to 6.6% and 4.3% respectively, gradually returning to more moderate levels, although still higher than the average of previous years.<sup>3</sup>

Although modest, the upward revision of growth forecasts is linked to the general improvement in inflationary dynamics experienced in the last months of 2022, due to lower energy prices, restrictive central bank policies,<sup>4</sup> and lower pressures along supply chains with an expected increase in global trade.

Real GDP - YoY change %



Consumer price - YoY change %



Source: EY calculations based on OECD Economic Outlook March 2023, IMF World Economic Outlook January 2023. The change in consumer prices for the world refers to the latest available International Monetary Fund projections, while all other values refer to the latest available OECD data.

<sup>1</sup> OECD Economic Outlook, Interim Report March 2023.

<sup>2</sup> OECD Economic Outlook, December 2021.

<sup>3</sup> Annual change in consumer prices 2010-2019 by world = 3.6%; USA = 1.8%; Eurozone = 1.4%. Source: IMF WEO October 2022.

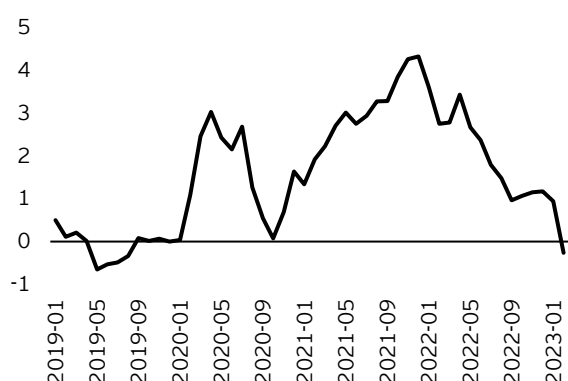
<sup>4</sup> International Monetary Fund, *Global Economy to Slow Further Amid Signs of Resilience and China Re-opening* (January 2023).



Indeed, it is interesting to note that February 2023 is the first month since 2020 in which the difficulties along value chains, as summarised in the *Global Supply Chain Pressure Index (GSCPI)*<sup>5</sup> - the index created by the Federal Reserve Bank of New York to monitor pressures along supply chains - have significantly reduced, showing values close to what has been recorded before the pandemic. However, uncertainty related to the easing of restrictions in China and the possible new increase in COVID infections remains, the latter resulting in potential new pressures along *supply chains*.<sup>6</sup>

In correctly evaluating the index, it is also important to emphasise that it shows the pressures related to supply-side developments only: by considering also demand-side dynamics, the pressures on value chains were already decreasing by the end of 2022.<sup>7</sup>

Global Supply Chain Pressure index

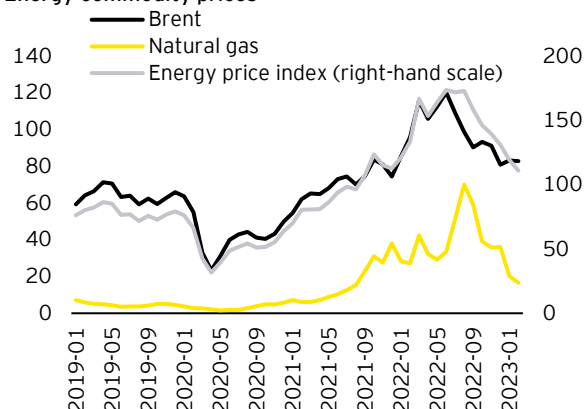


Source: EY calculations based on Federal Reserve Bank of New York data.

For what concerns the trend in energy prices, the decrease already experienced in the last months of 2022 continues its path in the first months of 2023, mitigating the dynamics that characterised the previous year. The price of natural gas in Europe, for example, has returned to the levels of the second half of 2021, while oil prices are back

in line with the levels of early 2022 (82.7 \$/bbl in February 2023 versus 85.5 \$/bbl in January 2022 for Brent).

Energy commodity prices



Source: EY elaborations on World Bank data. Brent and natural gas prices are expressed in \$/bbl and \$/mmbtu, respectively. The natural gas price refers to natural gas quoted in the Title Transfer Facility (TTF). The energy price index considers the price of several commodities globally, e.g., the price of crude oil, such as Brent and WTI, coal and LNG. The indices refer to the global market. Last available data: February 2023.

Although global growth is expected to accelerate in 2024, concerns related to the geopolitical environment and the monetary tightening pursued by the world's major central banks still make growth prospects uncertain.

Analysing the strategy of the major central banks, it can be noticed that they are all pursuing a highly restrictive monetary policy to cope with inflation, with the sole exception of Turkey.<sup>8</sup> While this choice of 'coordinated' monetary policy is based on the need to fight high inflation, the joint action could hamper growth more severely in advanced economies, due to the negative impact of higher rates on consumption and investment.<sup>9</sup> In order to maximise the action of monetary policy, it is also crucial to create a synergy with fiscal policy. This is even more important in the Eurozone countries, which are

<sup>5</sup> More information can be found at <https://www.newyorkfed.org/research/policy/gscpi#/overview>.

<sup>6</sup> Federal Reserve Bank of New York, *Global Supply Chain Pressure Index: The China Factor*.

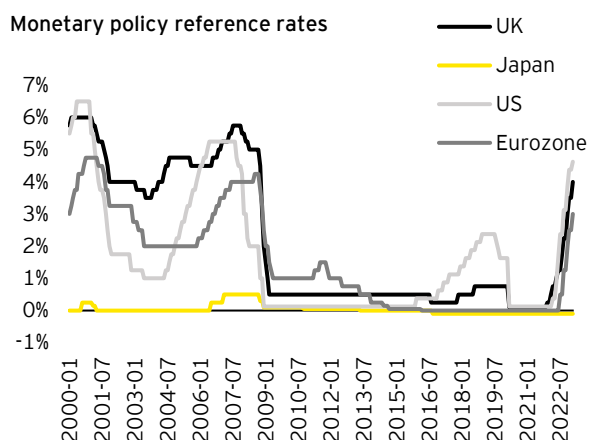
<sup>7</sup> Federal Reserve Bank of New York, *How Have Swings in Demand Affected Global Supply Chain Pressures? (February 2023)*.

<sup>8</sup> Reference is made to the 38 central banks mapped by the Bank for International Settlements. Specifically, we consider

Argentina, Australia, Brazil, Canada, Switzerland, Chile, China, Colombia, Czech Republic, Denmark, United Kingdom, Hong Kong SAR, Croatia, Hungary, Indonesia, Israel, India, Iceland, Japan, North Korea, North Macedonia, Mexico, Malaysia, Norway, New Zealand, Peru, Philippines, Poland, Romania, Serbia, Russia, Saudi Arabia, Sweden, Thailand, Turkey, United States, Eurozone, South Africa.

<sup>9</sup> OECD Economic Outlook, Volume 2022 Issue 2, <https://doi.org/10.1787/f6da2159-en>.

characterised by strong heterogeneity and the lack of a single tax system.



Source: EY elaborations on Bank for International Settlements data.

In the US, economic activity grew 2.9% in the fourth quarter of 2022 year-over-year, after a 3.2% growth in the third quarter. The slight deceleration of economic activity compared to the previous quarter was mainly due to weaker domestic demand and lower exports.<sup>10</sup> The increase in monetary policy rates continues, although at a different speed: at its meeting on the 22<sup>nd</sup> of March 2023, the Federal Reserve announced an interest rate hike of 25 basis points, in line with the decision of the February 2023 meeting and showing a deceleration from the trend seen since the second half of 2022.

It is important to emphasise that the high interest rate environment is translating into increased stress for the financial sector, as shown by recent events related to some financial institutions. In some cases, such institutions may indeed be vulnerable to rising interest rates, which may, for instance, translate into a reduction in the value of bond positions.

Although the events of the last few weeks may appear to be isolated cases, there are still fears of a possible deterioration of private sector confidence in the banking sector, as these events

are alarm bells for the potential weakness of the banking and financial sector in such volatile, uncertain and high interest rate market conditions. In the eurozone, we benefit from stricter regulation than during the last financial crisis and good coordination of institutions with banking supervision and risk assessment objectives, but isolated market events still pose risks when 'systemic' financial institutions are involved.<sup>11</sup>

Finally, global growth is also linked to the performance of the Chinese economy, mainly due to its centrality in global value chains and trade patterns. As mentioned, by the end of 2022 China reduced the strictness of its *zero-covid policy*, i.e., those measures aimed at containing the pandemic in the country. While the reopening of the Chinese economy is expected to contribute positively to the recovery of the world economy, it is also possible that the reopening will result in an increase in the prices of raw materials needed for manufacturing, such as energy and metals. China, in fact, accounts for a considerable share of the consumption of raw materials such as aluminium, copper, nickel, coal (around 60% of the total world consumption of each of these raw materials), but also cotton, maize and fertilisers (between 20% and 30% of world consumption).<sup>12</sup>

The lifting of the restrictive measures to contain the pandemic started on the 7<sup>th</sup> of December 2022 is expected to play an important role in the recovery of the economy. In December, China's National Bureau of Statistics PMI,<sup>13</sup> which focused on the latter part of the month (when infections were on the rise), fell sharply, to rise again in the following months to record levels compared to 2022. Daily mobility indicators in Chinese cities also showed a sharp decline in December, but this was followed by a slow recovery in January. The last quarter of 2022 was characterized by a 2.9% growth year-on-year, compared to 3.9% in the third quarter: this lower economic activity resulted in lower price pressure.

<sup>10</sup> U.S. Bureau of Economic Analysis (BEA), *Gross Domestic Product, Fourth Quarter and Year 2022 (Advance Estimate)*.

<sup>11</sup> See the list produced by the Financial Stability Board: <https://www.fsb.org/2022/11/2022-list-of-global-systemically-important-banks-g-sibs/>.

<sup>12</sup> OECD Economic Outlook, Interim Report March 2023: A Fragile Recovery.

<sup>13</sup> National Bureau of Statistics of China, Purchasing Managers Index.

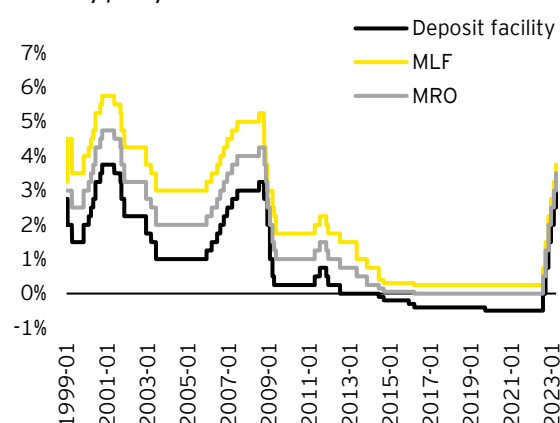


# The European Framework

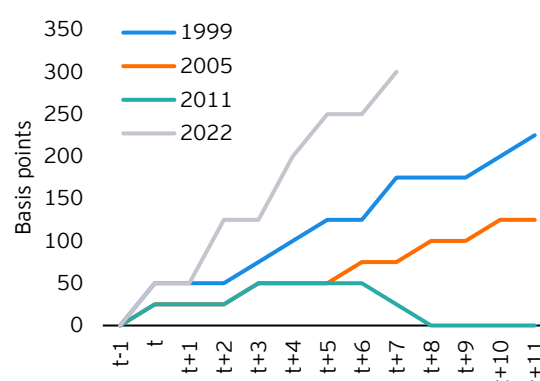
## Prices, monetary policy and the labour market

The increase of interest rates in the Eurozone continues at a significant pace. On March 16<sup>th</sup> 2023, the Governing Council of the ECB decided to raise key policy interest rates by 50 basis points. The interest rate on the main refinancing operations and the interest rates on the marginal lending facility and on deposits with the central bank<sup>14</sup> were raised to 3.50%, 3.75% and 3.00% respectively, with effect from the 22<sup>nd</sup> of March 2023. The magnitude of the latest increase is similar to that experienced at the last meeting on February 2<sup>nd</sup> 2023, and does not rule out future increases. The trend of monetary tightening in the Eurozone is unparalleled in the history of the single currency: in fact, if we consider the other periods in which the European Central Bank applied a restrictive monetary policy, the current speed of rate hike is almost twice as fast as in previous cases.

Monetary policy rate - ECB



Increase of the deposit facility rate



Source: EY calculations on European Central Bank data. MLF = marginal lending facility; MRO = main refinancing operation. The deposit rate refers to deposits at the central bank. Chart on the right: time  $t$  represents the year in which the first increase in the deposit rate occurs after a rate cut. Basis point = percentage point/100 (1 basis point = 0.01%).

It is important to note that the change in monetary policy started in 2022 at European and global level, is generating significant pressure on the international financial system, as witnessed by the turbulence in the financial markets in recent weeks. Events of this kind can have negative consequences on the growth of the global economy by undermining confidence in the financial system, even more so if they relate to systemically important banks. Banks of such importance are also within the Eurozone, but the risks of possible stress appear to be low at the moment, thanks in part to the effectiveness of special divisions within the European System of Central Banks focused on banking supervision and macroprudential policy issues, whose ultimate goal is to maintain financial stability.<sup>15</sup>

<sup>14</sup> The interest rate on deposits with the central bank is one of three reference rates that the ECB sets every six weeks as part of its monetary policy decisions. This rate defines the interest that banks receive on their overnight deposits (for the duration of one business day) with the central bank. The other two reference rates are the rate on the main refinancing operations (MRO) and the rate on the marginal lending facility (MLF). The MRO rate defines the cost at which banks can obtain credit from the central bank with a maturity of one week. If banks need overnight liquidity, they can use the marginal lending facility at a higher rate. For more information, see [https://www.ecb.europa.eu/stats/policy\\_and\\_exchange\\_rates/key\\_ecb\\_interest\\_rates/html/index.it.html](https://www.ecb.europa.eu/stats/policy_and_exchange_rates/key_ecb_interest_rates/html/index.it.html).

<sup>15</sup> For more information see <https://www.ecb.europa.eu/ecb/tasks/stability/html/index.en.html>.

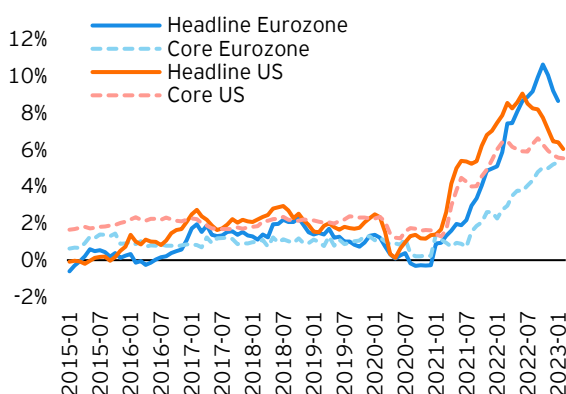


In addition to raising interest rates, the ECB also uses other monetary policy instruments. Based on the December 2022 decision, in February 2023 the Governing Council set out the detailed modalities for reducing the Eurosystem's holdings of securities under the *Asset Purchase Programme (APP)*<sup>16</sup> through the partial reinvestment of principal payments on maturing securities.

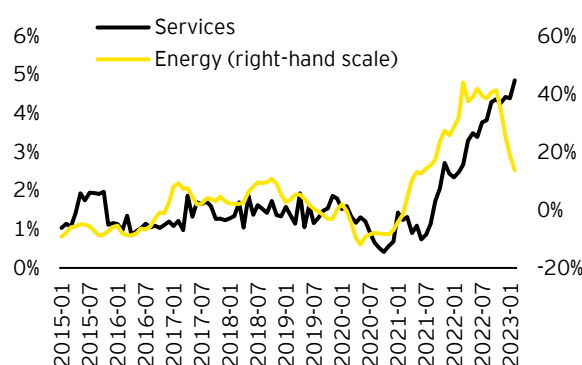
Monthly redemptions under the APP between March and June 2023 will have the decided average outflow pace of 15 billion euros per month, with the subsequent pace to be determined over time. The excess of outflows above 15 billion euros will instead be reinvested, thus ensuring that the Eurosystem maintains a continuous presence in the market.<sup>17</sup>

The monetary tightening is justified by a still very high inflation rate. In this respect, however, it is important to consider the two different dynamics of *headline* (i.e., the change in prices considering the entire basket of reference goods) and *core* (i.e., the change in prices of the basket of goods net of the change in energy and unprocessed food prices) inflation in the Eurozone in recent months.

Headline and core inflation



Components of the Consumer Price Index, Eurozone - Services and Energy



Source: EY calculations on OECD, Eurostat data. The *headline* measure considers all goods in the basket for calculating price change; the *core* measure considers goods in the *headline* basket net of energy and food. Latest available data: February 2023.

In fact, the former seems to have reversed the trend experienced since early 2021: this still represents a rise in prices, yet at a slower rate than previously recorded. The slowdown in energy price growth in the Eurozone is not only due to an actual decrease in energy prices, but also to a large downward 'base effect'.<sup>18</sup>

However, this scenario of lower energy prices in the Eurozone must take into account potential new sanctions on Russian energy products, such as those recently imposed on refined oil products, which could reduce their fall in the short to medium term.<sup>19</sup>

With reference to *core inflation*, in contrast to what has just been described for *headline* inflation, it continues to rise, demonstrating the presence of other components pushing up the price level, in addition

<sup>16</sup> The ECB's *Asset Purchase Programme (APP)* is part of a package of unconventional monetary policy measures that also includes targeted longer-term refinancing operations and was launched in mid-2014 to support the monetary policy transmission mechanism and provide the amount of accommodation needed to ensure price stability. The programme consists of: *corporate sector purchase programme (CSPP)*, *public sector purchase programme (PSPP)*, *asset-backed securities purchase programme (ABSPP)*, *third covered bond purchase programme (CBPP3)*. For more information, see <https://www.ecb.europa.eu/mopo/implement/app/html/index.it.html>.

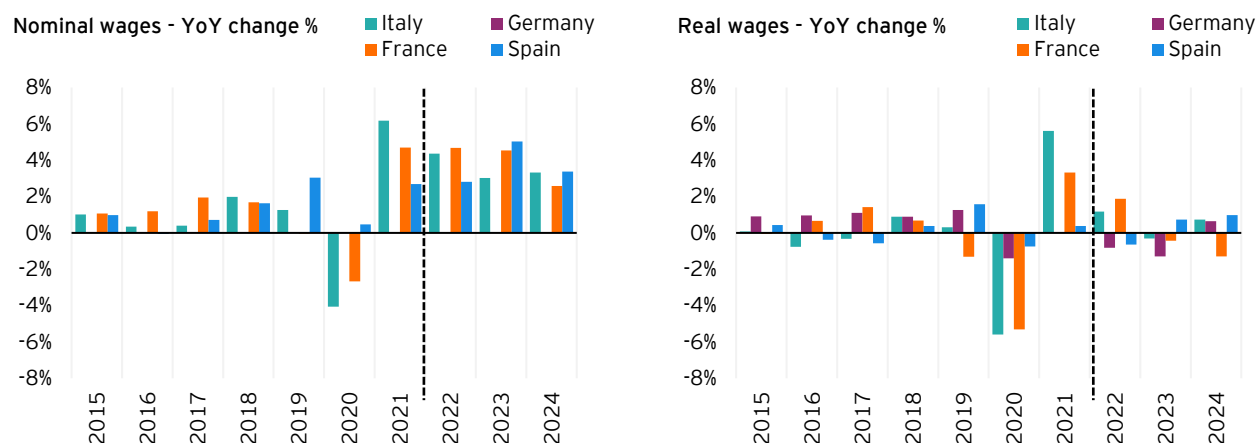
<sup>17</sup> ECB decides on detailed modalities for reducing asset purchase programme holdings, February 2023. For more information, see <https://www.ecb.europa.eu/press/pr/date/2023/html/ecb.pr230202~1a4ecbe398.en.html>.

<sup>18</sup> Inflation generally compares price changes from one year to the next. In 2022, prices were exceptionally high due to geopolitical tensions with Russia. Comparing today's lower prices with those much higher levels, the differences appear significant. This phenomenon is known as the 'base effect'. For more information, ECB Economic Bulletin, Issue 1 / 2023.

<sup>19</sup> Explanation of EU sanctions against Russia, European Council. For more information, see <https://www.consilium.europa.eu/it/policies/sanctions/restrictive-measures-against-russia-over-ukraine/sanctions-against-russia-explained/>.

to the energy component. It is also important to consider that the transmission of price increases through value chains takes time: the higher energy costs borne by companies take time to 'move downstream' in the value chain and thus result in higher consumer prices. This increases the likelihood of a potential persistence of inflation even as pressures on the energy market fade away.<sup>20</sup>

This persistence could also result in 'second round effects' on inflation related to rising wages, which are growing to cope with the fall in real household incomes in recent quarters. The Eurozone, therefore, might face a different kind of inflation, linked no longer to energy price but to wage dynamics. Nominal wages are expected to maintain a significant growth rate in 2023 and 2024, which will result in a modest increase in real wages in 2024 in the major European economies, with the only exception of France.



Source: EY elaborations on AMECO data. Forecasts start in 2022.

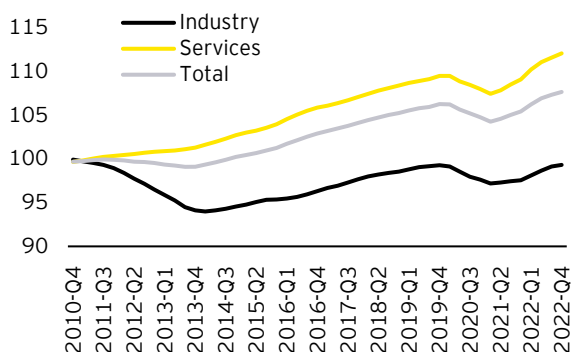
For what concerns the number of employees, after the decline due to the pandemic (a drop of around 2% in the total economy between the fourth quarter of 2019 and the first quarter of 2021), in the fourth quarter of 2021 the Eurozone returned to pre-crisis levels. However, it is interesting to note that different trends are recorded in industry and services: although the direction of the two curves is the same, it took about a year longer for employment in industry to return to pre-crisis levels (around 33 million employees in 2022 Q2) than in services (around 101 million employees in 2021 Q3).

Behind such a dynamic labour market is a high availability of jobs: this is what the job *vacancy rate*,<sup>21</sup> i.e., the ratio of unfilled jobs to total jobs, shows, peaking in 2022 Q2 (around 2.9% for industry and 3.1% for services in 2022 Q4). However, the number of available jobs is slowly decreasing in 2022 Q3, which could be led to a cooling of the labour market. It remains important to emphasise that, although slightly declining in recent quarters, these figures remain at their highest level since more than a decade.

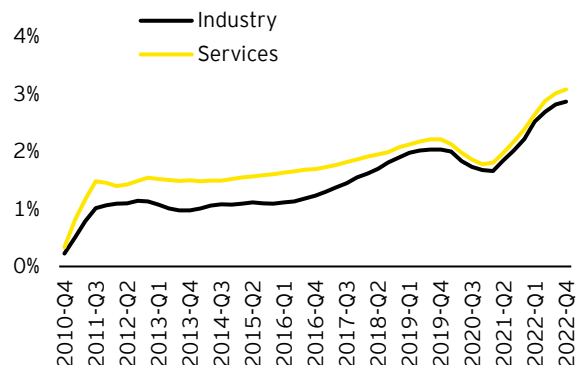
<sup>20</sup> Inflation Diagnostics, ECB, <https://www.ecb.europa.eu/press/blog/date/2022/html/ecb.blog221125~d34babdf3e.en.html>.

<sup>21</sup> An unfilled job is defined as a newly created paid position that is unfilled or about to become vacant for which the employer (1) is taking action and is willing to find a suitable candidate outside the company concerned (2) intends to fill immediately or within a certain period of time. Job vacancy rate = number of unfilled jobs / (number of filled jobs + number of unfilled jobs) \* 100. For further information, please refer to [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Job\\_vacancy\\_rate\\_\(JVR\)](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Job_vacancy_rate_(JVR)).

Number of employed, Eurozone - 4-period moving average, index 2010Q4=100



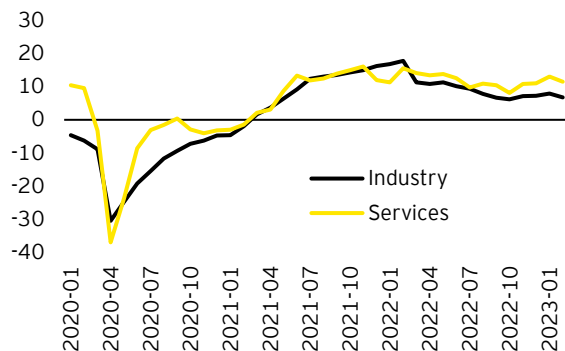
Job vacancy rate, Eurozone - 4-period moving average



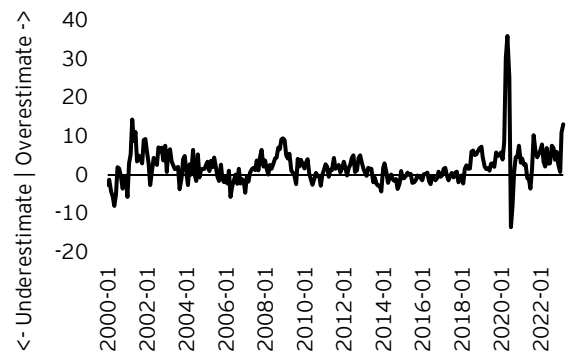
Source: EY calculations on Eurostat data. Job vacancy rate = number of unfilled jobs / (number of filled jobs + number of unfilled jobs) \* 100. Last available data: 2022 Q4.

The dynamics in the labour market is also described by 'soft data', i.e., survey-related indicators. Interesting in this respect are the survey data of the European Commission (*Business and consumer surveys*), which show positive three-month employment expectations in industry and services. These surveys indicate two interesting points: the first concerns the post-pandemic recovery and the resilience of employment expectations despite uncertainties related to the geopolitical and economic scenario; the second is related to employment expectations for the next three months and the *ex-post* assessments of employment trends. This last aspect can be analysed by cross-referencing the employment expectations in the three months following the survey and the *ex-post* assessment of the employment trend in the previous three months: by subtracting one from the other it is possible to have a representation of the extent to which employment expectations are over- or underestimated. It can be noticed how, in the first months of 2020, little impact on the pandemic was expected (overestimation of employment trends) and how expectations subsequently plummeted, indicating gloomier expectations than occurred. The last months of 2022 and the first months of 2023 were characterised by positive expectations, with potential upward revision of expectations on wage trends.

Employment expectations in the next 3 months - Eurozone



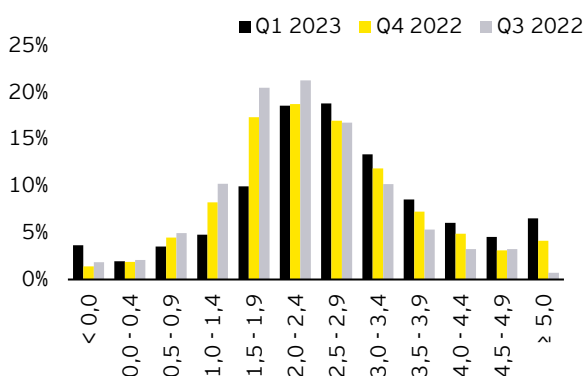
Employment expectation in the service sector - Eurozone



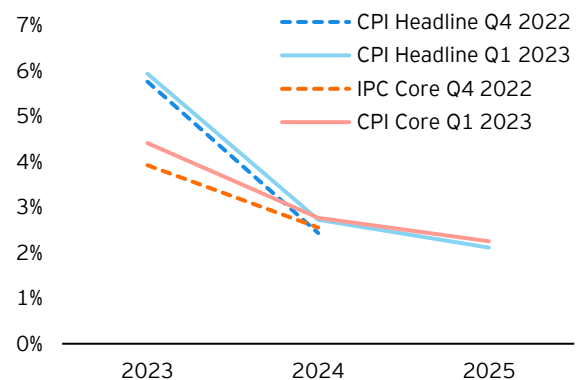
Source: EY elaborations on European Commission data (*Business Consumer Surveys*). The over- or underestimation of employment expectation is calculated as the difference between the perception of the employment trend in the three months preceding the survey and expectations on employment for the three months ahead, in order to compare the "current" perception with the future expectations of the "previous" three months. Last data available: February 2023.

Pressures on price developments related to the labour market were also reflected in the ECB's *Survey of Professional Forecasters* inflation expectations, which were slightly higher than expected in previous editions of the survey. Core inflation expectations for 2023 and 2024 were revised upwards to 4.4% and 2.8%, respectively, with revisions of 0.5 and 0.2 percentage points. Expectations for 2025 are 2.3%, and the revisions reflect expectations of stronger and larger indirect effects than expected and a higher increase in expected wage growth.<sup>22</sup> These data also show how the expectations of professionals are anchored to the European Central Bank's inflation target of 2% in the long run, demonstrating how monetary policy is having a positive effect on professionals' expectations.

Probability distribution on inflation expectations for 2024 (headline)



Inflation expectations



Source: EY calculations on ECB data (Survey of Professional Forecasters, Q1 2023). CPI: consumer price index.

As already anticipated, the labour market dynamics just described and the expected transmission of price increases through value chains might result in a more persistent inflation in 2024, which in turn may push the ECB to maintain a restrictive monetary policy for a longer period than could have been expected a few

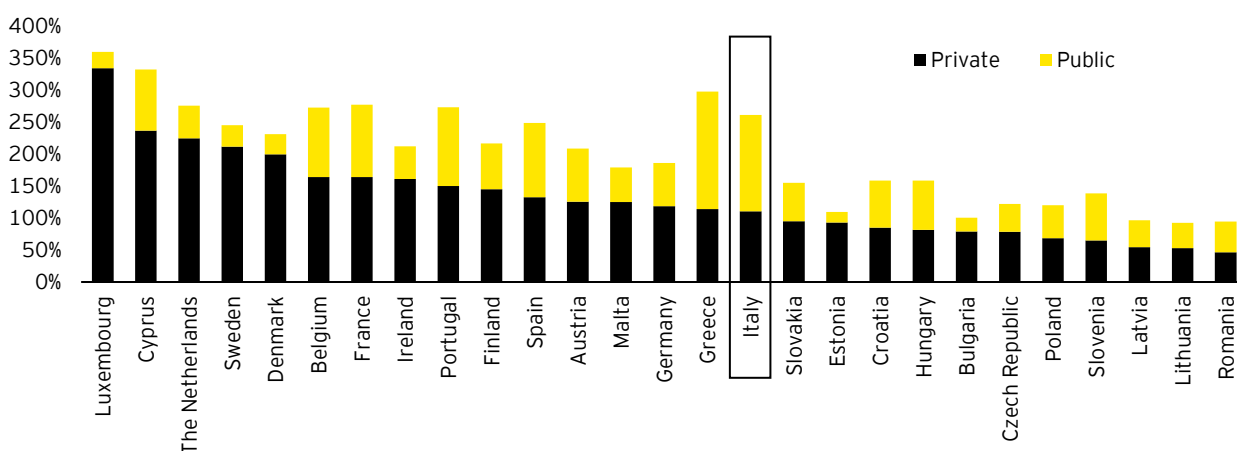
<sup>22</sup> The ECB Survey of Professional Forecasters, First Quarter of 2023.



months ago. Rising interest rates will risk strongly disincentivising investment and consumption, adding pressure on debt sustainability, both public and private.

In this regard, it is in fact interesting to note that while the countries of 'southern Europe' are characterised by a high ratio of public debt to GDP (as in the case of Italy and Greece), it is at the same time important to emphasise that the countries of the 'north' (and beyond) are instead characterised by a large private debt: this is the case of the Netherlands and Sweden. In a context of high inflation and relatively high interest rates, the level of private debt is of particular importance: a recent study by the Bank for International Settlements showed that countries with a high ratio of private debt to GDP are more likely to experience stress in the financial sector in the event of high inflation rates and a monetary tightening regime.<sup>23</sup>

Public and private debt (% GDP, 2022 Q3)



Source: EY calculations on ECB data. Private debt considers debts of households, non-profit institutions and non-financial institutions.

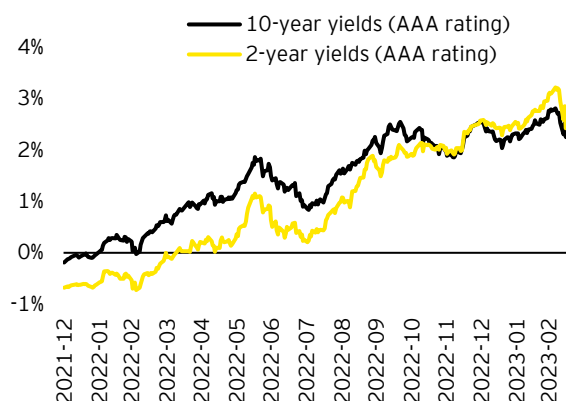
Of particular interest is the development of the yield curve for the Eurozone: since the end of 2022, in fact, there has been an inversion of the curve, i.e., a reduction of interest rates on long-term bonds below those on short-term bonds. Under normal economic conditions, investors are in fact rewarded with higher interest rates for holding bonds for longer periods.<sup>24</sup>

The interpretation of the signals provided by the inversion of the yield curve remains difficult in any case and leaves room for several explanations. First, it is important to emphasise that the analysis is complicated by the difficult construction of the curve itself in the Eurozone, which is composed of heterogeneous economies, as opposed to the US. Furthermore, analysing past signs of a yield curve inversion in the US, it is possible to state that while every recession resulted in a yield curve inversion, the opposite cannot be said, i.e., an inversion was not always synonym of recession. This relationship is even less evident in the Eurozone, but it remains a sign of 'anomalies' in the financial market and a potential indicator of a severe slowdown, if not of an expected recession.

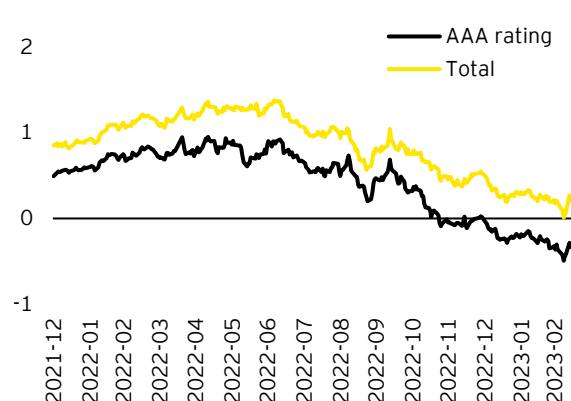
<sup>23</sup> Boissay, F., Borio, C., Leonte, C. S., Shim, I., (2023). Prudential policy and financial dominance: exploring the link, BIS Quarterly Review, March 2023.

<sup>24</sup> World Economic Forum, *What does an inverted yield curve look like and what does it signal about an economy?*, <https://www.weforum.org/agenda/2022/12/inverted-yield-curve-signal-economy-euro-dollar/>.

Yield of AAA-rated securities - Eurozone



Yield differential - Eurozone (10y-2y, p.p.)



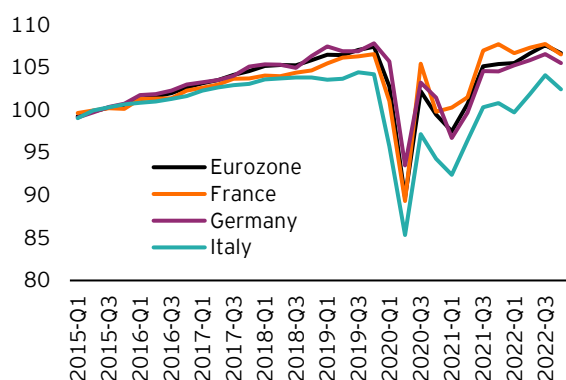
Source: EY calculations based on Eurostat data. Yield curve spread is calculated as the difference between 10-year yields and 2-year yields for the two curves (total and AAA-rated bonds only). Latest data: 17 March 2023.

## Short-term economic indicators

By analysing the main economic indicators, it can be noted that the other major European economies also experienced a standstill in economic growth in the last quarter of 2022. After the positive performance of the third quarter, in fact, growth in the Eurozone remained essentially flat, with France recording timid growth (+0.1%) and Germany experiencing a more significant contraction than Italy (-0.4% in Germany, and -0.1% in Italy). Similarly to what was recorded for Italy, the fall in the fourth quarter was mainly linked to a drop in household consumption, which in the Eurozone recorded -0.9%, a slightly better performance in aggregate than the data in the main economies (-1.1% in France, -1.0% in Germany and -1.6% in Italy). A broader analysis also shows how, in general, GDP levels in the Eurozone countries have not yet returned to pre-pandemic levels.

While the trend in GDP is similar among the countries under analysis, the trend in industrial production is slightly more different. In January 2023, for example, France recorded a significant drop of 1.9% compared to the previous month, against an average growth in Eurozone of 0.7%. By contrast, the situation in Germany was significantly better, with an increase of 1.8% compared to December 2022. However, it is important to point out that, broadening the perspective, Germany and France are still significantly below the levels recorded before the pandemic, unlike Italy, where the industry is showing good resilience and dynamism.

GDP - index, 2015=100



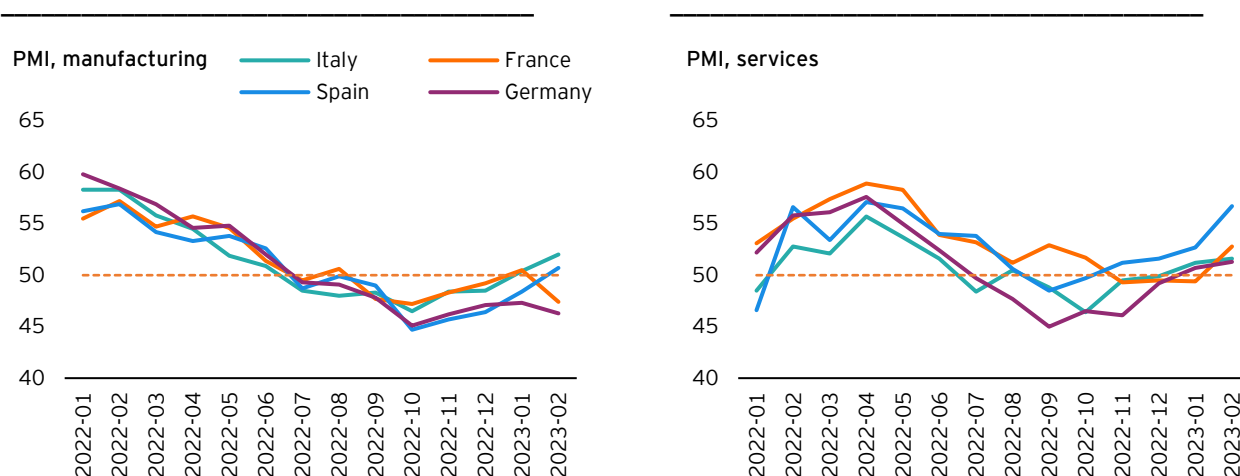
Industrial production - index, 2015=100



Source: EY elaborations on Eurostat data. For industrial production, we refer to NACE Rev. 2 B-D codes (Mining and quarrying; manufacturing; electricity, gas, steam and air conditioning supply).

The analysis of the PMI indicator<sup>25</sup> for manufacturing and services also shows some interesting and more recent details of the situation for the two sectors. In this regard, it is interesting to note that for France, the negative trend experienced in the variation of the manufacturing PMI seems to show no signs of improvement, with the index continuing its descent below the threshold value of 50, thus signalling a contraction in the industrial activity. The trend of the indicator for Germany, on the other hand, is slightly different, with the indicator continuing to remain below the threshold value since October 2022. The situation is opposite for Italy and Spain, where perceptions remain positive and are recovering from the lows experienced in 2022 Q4. The negative development of the indicator for Germany poses major uncertainties for the future development of manufacturing in Europe. Given the strong integration between Italian and German manufacturing, the current German weakness could be reflected in a worsening of manufacturing performance in Italy in the coming months.

By contrast, the services sector remains resilient in the major Eurozone economies, showing an upward trend from late 2022 and early 2023, on values that signal expanding economic activity.



Source: EY calculations based on S&P Global data. Latest data: February 2023.

<sup>25</sup> The Purchasing Managers' Index (PMI) is one of the most popular business cycle indices, i.e., an index of the prevailing direction of economic trends in the manufacturing, construction, and service sectors, obtained through timely surveys of the most representative companies in the relevant sectors. Values above 50 indicate an upward trend in economic activity, values below 50 a downward trend.

# The Italian Economy

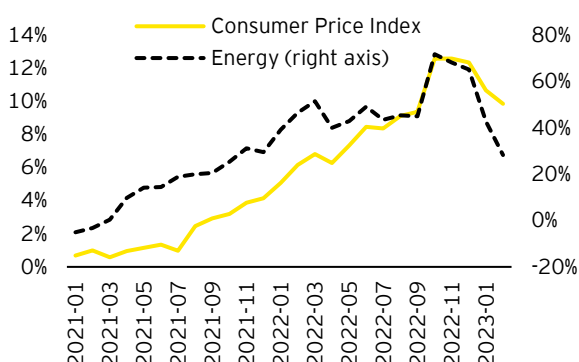
## Prices and the labour market

In November 2022, inflation peaked in Italy (12.6% year-on-year), similar to what was experienced in the rest of the Eurozone. However, it is important to emphasise that inflation in Italy is still significantly higher than in the rest of the Eurozone by about one and a half points, although this gap seems to be narrowing.

Underlying the narrowing of the gap between the two inflation rates is the concomitant reduction in the increase of energy prices in Italy, which, after a significant increase, are now experiencing a sharp deceleration. It is interesting in this regard to note that energy goods inflation was more pronounced in Italy than the average of the other member countries of the single currency. This is mainly related to the nature of the Italian economy and energy dependencies on specific suppliers: in 2020, Italy was dependent for 40.5% of its gas supply from Russian, compared to a Eurozone average of 25.4%.<sup>26</sup>

Actions taken in the direction of a reduction of this dependence are, however, allowing Italy to diversify its supplies.

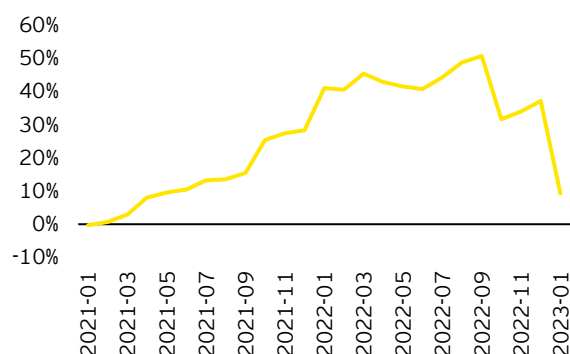
Consumer price index and energy prices, Italy - YoY change %



Source: EY calculations on Eurostat data.

The slowdown in consumer prices is also supported by the trend in producer prices for industry, which in Italy saw a significant reduction in the last months of 2022 and the first months of 2023.

Producer price index in industry, Italy - YoY change %



Source: EY calculations on Eurostat data. Producer prices refer to the industrial sector and exclude changes in producer prices in construction and waste management, as well as food and tobacco. Latest available data: February 2023 for CPI, January 2023 for PPI (producer price index).

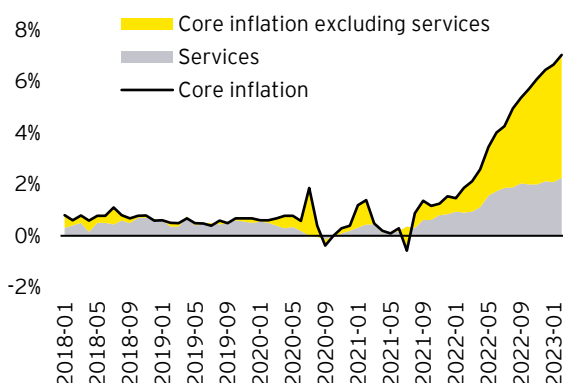
The trend of *headline* inflation (i.e., inflation considering the overall basket of goods, which fell from 12.6% in November 2022 to 9.8% in February 2022 in Italy) shows an encouraging trend, but values are still far from the rest of the Eurozone (where *headline* inflation fell from 10.1% to 8.5% over the same period), while at the same time the analysis of *core* inflation (general index net of energy and unprocessed food) helps to deepen further the intrinsic dynamics of the Italian economy. Indeed, *core* inflation is still slightly below the one recorded for the Eurozone, although the difference is quickly narrowing (7.0% in Italy versus 7.4% annual change in the Eurozone as of February 2023). Comparing the latest data with those of early 2022, in fact, we can see that specific dynamics are consolidating, mainly linked to the transmission of price

<sup>26</sup> EU energy mix and import dependency, Eurostat, 2020.



increases through value chains, and to the delayed dynamics of price adjustments in specific sectors.

Contributions to core inflation, Italy



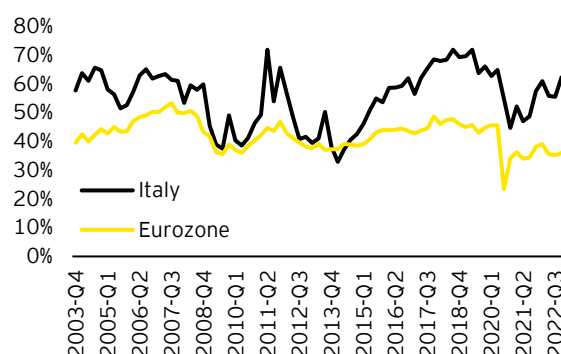
Source: EY elaborations on Eurostat data. Latest available data: February 2023.

In this regard, there are two interesting elements to be considered: on the one hand, the trend in the price of services, which account for about 39% of the total basket considered for the calculation of *headline* inflation (42% in the Eurozone) and 58% of core inflation (61% in the Eurozone), which has been growing steadily since the beginning of 2022, with an acceleration in the second half of that year; on the other hand, the trend in the remaining *core* components, which continue to show consistent growth, and represent the main element of the increase in core inflation. Although, the largest contribution to *core* inflation growth does not come from service prices, it remains important to emphasise that the latter usually have an important persistence character, which may result in a slower decline in overall inflation.<sup>27</sup>

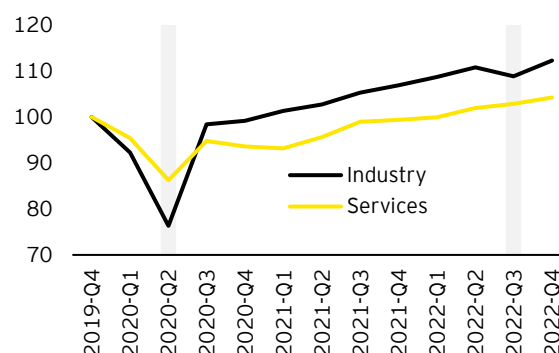
In analysing the trend of price increases in the services sector in Italy, it is important to consider how this sector has maintained a certain resilience throughout the crisis period and how it manifests a certain ability to continue operating in adverse conditions. In fact, analysing the data from the European Commission's Business and Consumer Surveys, it can be seen how, following the outbreak and spread of the pandemic in 2020, fewer and fewer Italian companies are

finding it difficult to continue their day-to-day business activities despite the recent uncertainties arising from the international context. Similarly, we can see how the trend in value added in the service sector has been less affected by the pandemic crisis, as well as by geopolitical pressures, unlike industry, where these events have resulted in a reduction in the value added.

% of enterprises in services with no impediments to economic activity



Value added by industry and services, Italy - index 2019Q4=100



Source: EY elaborations on data from European Commission (*Business and Consumer Surveys*), Eurostat. Grey-shaded areas refer to the pandemic crisis and the outbreak of the Russia-Ukraine war.

Given the importance of labour market dynamics in determining prices, it is interesting to deepen the analysis and compare the performance of some key variables in Italy with the respective values recorded for the Eurozone. In this regard, of particular help is the Beveridge curve, which investigates the relationship between

<sup>27</sup> In this respect, please refer to the results of the studies coordinated by the ECB in the Eurosystem's Inflation Persistence Network (IPN) at

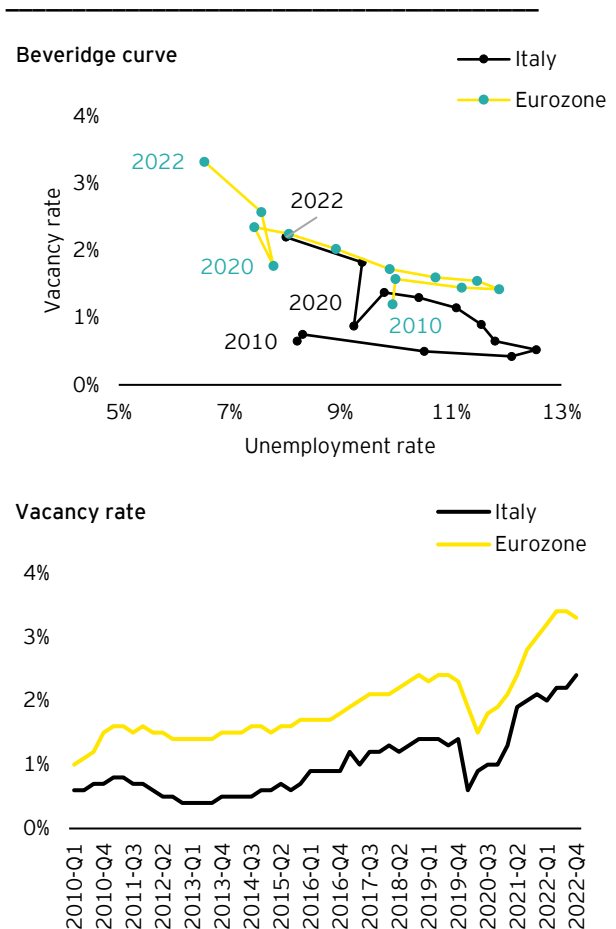
[https://www.ecb.europa.eu/pub/economic-research/research-networks/html/researcher\\_ipn\\_briefsummary.en.html](https://www.ecb.europa.eu/pub/economic-research/research-networks/html/researcher_ipn_briefsummary.en.html).

unemployment and vacancies in the economy, thus providing information on the health of the economy and the characteristics of the labour market. The relationship between the two variables of analysis, i.e., the unemployment rate and vacancies, is generally an inverse relationship: a higher unemployment rate is generally accompanied by a lower *vacancy rate*, and vice versa.

Analysing the Italian situation in relation to the rest of the Eurozone, there are two points of major interest: the first is related to the performance of the labour market in Italy, which records, in the two variables considered, the best performance for several years; the second instead refers to the comparison with the Eurozone, which presents an even more dynamic labour market than the Italian one (with a lower unemployment rate and a higher *vacancy rate*). Hence, it is possible to expect pressure on prices resulting from different labour market dynamics, and specifically less pronounced for Italy. A more in-depth analysis of the latest quarterly data also indicates that the growth of the *vacancy rate* has momentarily come to a halt, with potentially positive repercussions in terms of a cooling labour market and consequently less pressure on price trends.

A further point of interest is the comparison of the joint observation of the unemployment rate and the vacancy rate in 2022 and 2010: in these two years, the unemployment rate is almost similar, whereas in 2010 this was accompanied by a low number of vacancies, in 2022 the situation differs. Although investigating the underlying causes of this difference is beyond the

scope of the current discussion and would require a separate study, it is possible to assume that the actual lack of the right job profiles is part of the problem (*skills mismatch*).

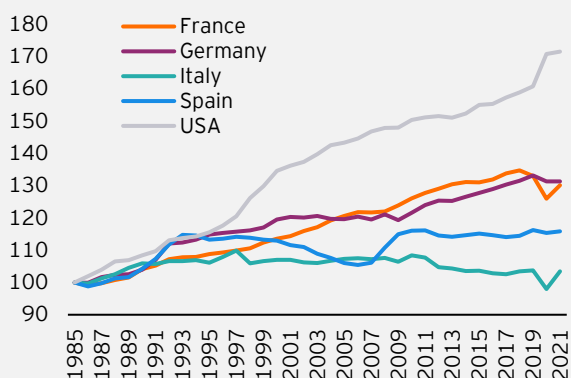


Source: EY calculations based on Eurostat, ISTAT data. Q4 2022. Data before 2016Q1 for Italy refer to organisations with more than 10 employees; from 2016Q1 companies with one or more employees are considered.

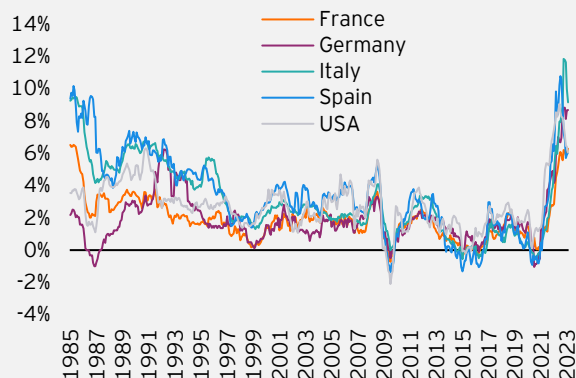
# Focus: real wages and productivity in Italy

The topic of real wages has returned to the forefront following the recent inflationary dynamics. Indeed, a significant price increase such as the one recorded in recent months translates into a fall in real wages, if not followed by an increase in nominal wages of a similar magnitude. When analysing real wage trends, however, it is also important to consider the longer-term dynamics: this brings us to one of the fundamental relationships in market economics, which sees the real wage linked to labour productivity trends.<sup>28</sup>

Real wages - index, 1985=100



Annual inflation rate

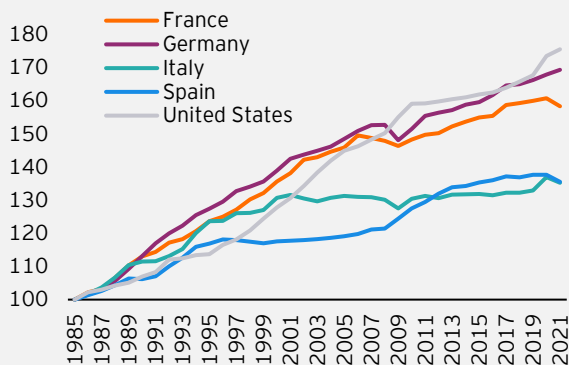


Source: EY calculations based on Eurostat, AMECO data. The figure on real wages refers to the individual employed.

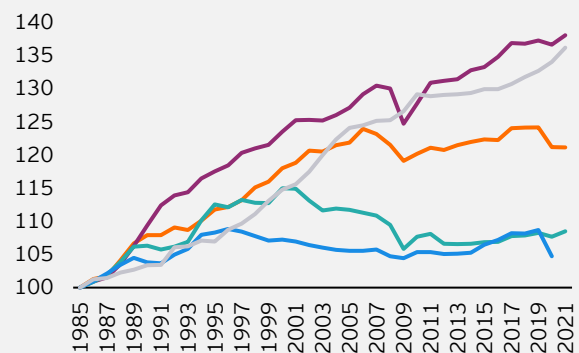
The first key element to consider is the essentially zero growth of real wages in Italy since the 1990s. This figure becomes even more significant when compared to the other major European economies (Germany, Spain and France) and the United States. Specifically, between 1995 and 2021, labour productivity, measured as GDP per hour worked, grew by only 9% in Italy, compared to 54% in the United States, 33% in Germany, 28% in France and 16% in Spain.

<sup>28</sup> Maeger, N., Speckesser, S., (2011). Wages, productivity and employment: A review of theory and international data, Institute for Employment Studies.

Labour productivity (GDP per hour worked) - index, 1985 = 100



Multi-factor productivity - index, 1985=100



Source: EY elaborations on OECD data.

It is therefore interesting to observe how this trend in real wages is linked to low productivity growth, one of the main causes of the slow growth of the Italian economy. Analysing the Gross Domestic Product per hour worked, one of the possible measures of labour productivity,<sup>29</sup> Italy in fact shows a significant stagnation around the 1990s, similar to that recorded for real wages.

Similar conclusions can be reached by analysing the dynamics of *multifactor productivity* (MFP),<sup>30</sup> which shows a strong slowdown in the late 1990s and then begins to decline in the following years (-5.6% from 2000 to 2021), until returning to 1993-94 levels in 2021. This phenomenon is mainly linked to a concomitant reduction in capital productivity, which is evident in Italy and Spain.<sup>31</sup> A deeper analysis shows that the decline in MFP in Italy was more pronounced in small and medium-sized enterprises, while large enterprises showed better results.<sup>32</sup>

Analysing in detail the possible underlying causes of Italy's productivity stagnation is very difficult. The topic has been widely studied in the economic literature and in policy analyses; it is possible to skim through the main points of focus for a quick overview of the issue, without claiming to provide a complete, extremely complex overview.<sup>33</sup> We are mainly addressing the issues more related to the Italian production context and the problem of low productivity in Italy, leaving aside other important factors such as regulation, the quality of management, the governance structure of companies and their internationalisation. For a review on these latter issues, see, among others, Bartelsman and Doms (2000), and for a more recent and comprehensive treatment also Syverson (2011).<sup>34</sup>

<sup>29</sup> Schreyer, P., & Pilat, D., (2001). Measuring productivity. OECD Economic studies, 33(2), 127-170.

<sup>30</sup> Multi-factor productivity (MFP) reflects the overall efficiency with which labour and capital inputs are utilised together in the production process. Changes in multifactor productivity reflect the effects of changes in management practices, brands, organisational changes, general knowledge, network effects, input spillovers, adjustment costs, economies of scale, effects of imperfect competition and measurement errors.

<sup>31</sup> ISTAT, 28 November 2022. For more information, see <https://www.istat.it/it/archivio/278143>.

<sup>32</sup> Milana, C., Nascia, L., Zeli, A., (2013). *Decomposing multifactor productivity in Italy from 1998 to 2004: evidence from large firms and SMEs using DEA*, Journal of Productivity Analysis volume 40, pages 99-109 (2013).

<sup>33</sup> For in-depth studies and some literature reviews, also with reference to the Italian 'case', see for example Brandolini, A., Bugamelli, M., (2009). Report on trends in the Italian production system, Questioni di Economia e Finanza (Occasional papers), Number 45 - April 2009; Giordano, C., Toniolo, G., Zollino, F., (2017). Long-run trends in Italian productivity, Questioni di Economia e Finanza (Occasional papers), Number 406 - November 2017; Bugamelli, L., Lotti, F., (2018). *Productivity growth in Italy: a tale of a slow-motion change*, Questioni di Economia e Finanza (Occasional papers), Number 422 - January 2018.

<sup>34</sup> Bartelsman, E. J., & Doms, M. (2000). Understanding productivity: Lessons from longitudinal microdata. Journal of Economic literature, 38(3), 569-594; Syverson, C. (2011). What determines productivity? Journal of Economic literature, 49(2), 326-365.

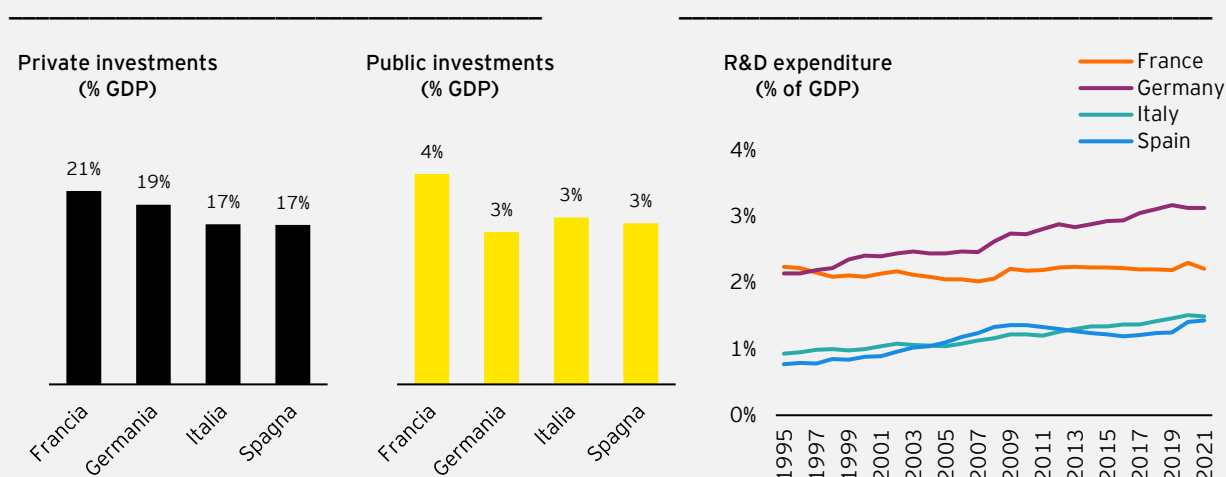


## Public and private investment

A key element to consider when analysing productivity trends concerns the level of investment by the private and public sector, as well as more specific investment in research and development (R&D).

If, from the point of view of public investment, Italy is substantially in line with what was recorded at European level (Italy went from 2.8% of GDP in public investment in 2000 to 2.9% in 2021, compared to Germany, which went from 2.3% to 2.6%, France going from 3.9% to 3.6% and Spain going from 3.7% to 2.8%), a more substantial difference is recorded in private investment, averaging 16.7% of GDP in Italy between 2000 and 2021, compared with 18.4% in France, 18.2% in Germany and 19.4% in Spain.

Important differences also emerge from the analysis of R&D investments, which amount to 1.2% of GDP in Italy between 1995 and 2021 compared to 2.2% in France, 2.4% in Germany and 1.1% in Spain. The level of R&D investment is important because it is linked to the country's ability to generate innovation and raise productivity, especially in the long run.<sup>35</sup> Leaving aside reasons related to managerial capacity, or linked to incentives and the possible return on investment, the low level of R&D investment in Italy could also be partly linked to the "fragmentation of the production system into many small companies that have difficulty in bearing the high costs inherent in R&D and in assuming the risks".<sup>36</sup>



Source: EY elaborations on Eurostat data.

## Human Capital

Human capital is another key growth factor, closely linked to innovation capacity. On the one hand, the propensity of firms to invest in new technologies, to provide on-the-job training and to demand skilled labour is held back by the difficulty of finding and hiring suitably qualified workers; on the other hand, the consequent low returns on education and, more generally, on investment in human capital limit the incentives of young people to train and older people to undertake continuous training.<sup>37</sup> In relation to the first point, and with reference to Italy, it is interesting to show that in 2020 in Italy only 17 people per thousand inhabitants between 20 and 29 years of age can boast a tertiary education in scientific subjects<sup>38</sup>, against 29 in France and 22 in Germany. This figure is also linked to the presence of numerous NEETs<sup>39</sup>, an acronym that stands for all those people who are neither employed nor studying, who

<sup>35</sup> On the role of R&D investment in productivity dynamics see Audretsch, D. B., & Belitski, M. (2020). The role of R&D and knowledge spillovers in innovation and productivity. *European economic review*, 123, 103391. For a 'classic' discussion see also Lichtenberg, F. R., & Siegel, D. (1991). The impact of R&D investment on productivity - new evidence using linked R&D-LRD data. *Economic inquiry*, 29(2), 203-229. See also Hall, B. H., Mairesse, J., & Mohnen, P. (2010). Measuring the Returns to R&D. In *Handbook of the Economics of Innovation* (Vol. 2, pp. 1033-1082). North-Holland.

<sup>36</sup> Bugamelli, M., Cannari, L., Lotti, F., & Magri, S. (2012). The innovation gap in the Italian production system: roots and possible remedies. *Questioni di economia e finanza*, 121, 203-279.

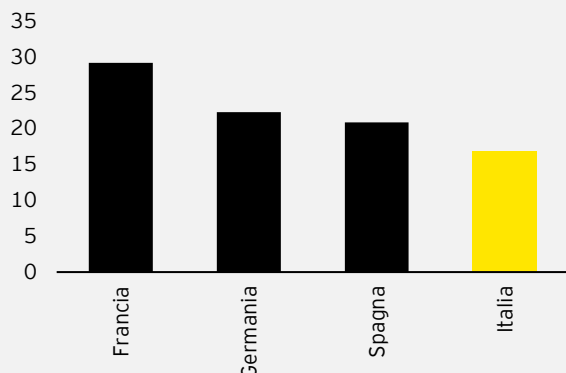
<sup>37</sup> Bugamelli, L., Lotti, F., (2018), op.cit.

<sup>38</sup> Reference is made to ISCED level 5-8 according to UNESCO parameters.

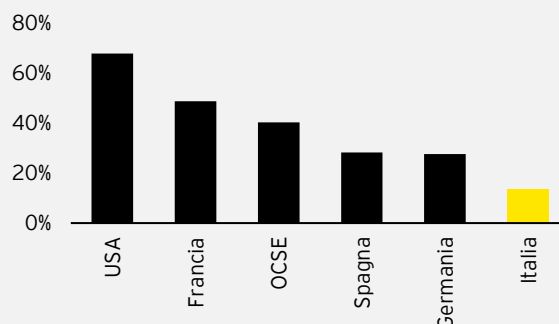
<sup>39</sup> NEET stands for *Not in Education, Employment or Training*.

amount to about 26% on average of the population aged between 15 and 34<sup>40</sup> (against about 10% in Germany, 15% in France and 20% in Spain).

Graduates per 1000 inhabitants, 2020



% difference in salary between a worker with tertiary education and one with secondary education

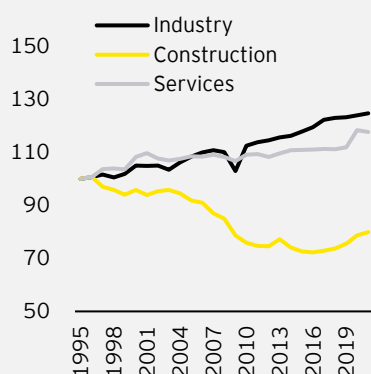


Source: EY elaborations on data from Eurostat, OECD. The number of graduates refers to degree courses in scientific subjects, e.g., mathematics or engineering. The age considered is between 20 and 29. The wage gap (graph on the right) is calculated as the ratio of the salary of a worker with a secondary education (ISCED 3) to the salary of a worker with tertiary education.

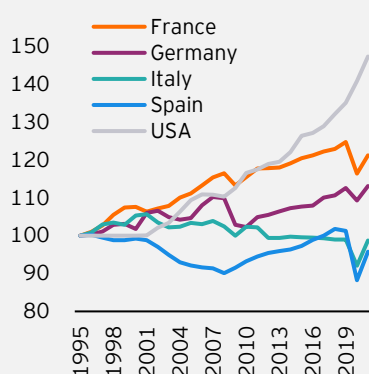
### The role of the service and ICT sector

According to many analysts, one of the main causes behind the low growth in labour productivity is attributable to 'slow productivity growth in the now dominant service sector'.<sup>41</sup> If, in fact, one compares labour productivity in the different sectors of the economy in Italy and other countries, one can see how productivity in this sector has failed to keep pace with its main *competitors*. Specifically, it is interesting to note that in the *information and communication* sub-sector, Italy has recorded significantly lower growth than the other countries under analysis over the last 50 years.

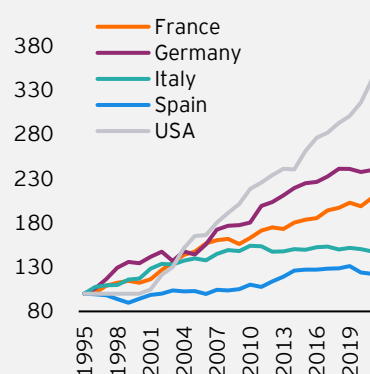
Sectoral productivity, Italy - index, 1995=100



Productivity - Services, index, 1995=100



Productivity - ICT, index, 1995=100



Source: EY elaborations on OECD data.

The inability of Italian companies to leverage the digital revolution is identified as the main cause behind the low productivity growth also in other important studies: in this regard, Pellegrino and Zingales (2017)

<sup>40</sup> Average of the 10 years between 2012 and 2021.

<sup>41</sup> Giordano, C., Toniolo, G., Zollino, F., (2017), op. cit.

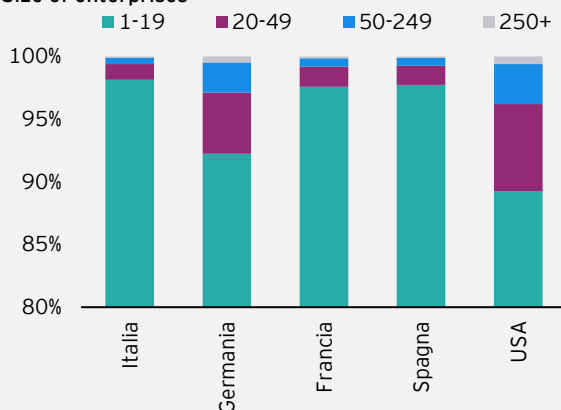
also add how the effects of this delay can have an even greater impact due to the lack of meritocracy in the selection of managerial figures.<sup>42</sup>

Another factor related to the issue of the lack of transformation of the Italian production system concerns the 'misallocation' of resources (capital and labour), which does not always favour the most productive enterprises and virtuous dynamics. It has been studied how this problem has increased significantly since 1995, and how it can explain much of the slowdown in Italian productivity since then. Following aggregate shocks such as the acceleration of globalisation and the revolution in technological sectors, which would have required major adjustments in the production structure, the Italian economy has probably not been able to adapt sufficiently.<sup>43</sup>

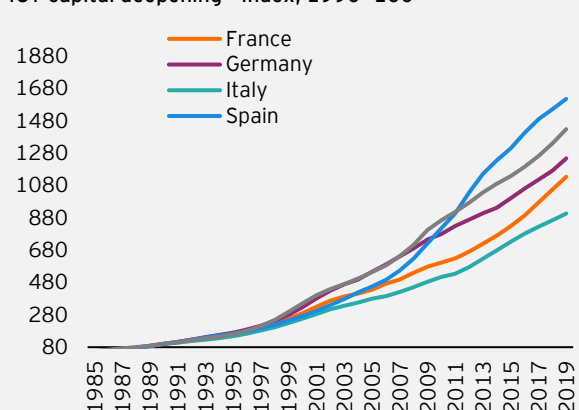
### Size of Italian companies

The difficulty in adapting the Italian production system is linked to another factor, often referred to in the literature as another underlying cause of labour productivity, and it refers to the size of enterprises. In fact, the industrial fabric of the country is notoriously characterised by a prevalence of small and medium-sized enterprises, which, in aggregate, show a low propensity to innovation, adoption of new technologies and internationalisation, albeit with peaks of excellence.<sup>44</sup> Linked to this is also a lower intensity of technological capital (*ICT capital deepening*)<sup>45</sup>, also seen as a possible factor in the slowdown of labour productivity<sup>46</sup>, and a greater difficulty for small and medium-sized enterprises to adapt their production structure to new technology.

Size of enterprises



ICT capital deepening - index, 1990=100



Source: EY elaborations on OECD data. Size classes refer to the number of employees.

<sup>42</sup> Pellegrino, B., & Zingales, L. (2017). Diagnosing the Italian disease (No. w23964). National Bureau of Economic Research.

<sup>43</sup> Calligaris, S., Del Gatto, M., Hassan, F., Ottaviano, G. I., & Schivardi, F. (2018). The productivity puzzle and misallocation: an Italian perspective. *Economic Policy*, 33(96), 635-684.

<sup>44</sup> Brandolini, A., Bugamelli, M., (2009), op. cit.

<sup>45</sup> ICT capital deepening (ICT CD) refers to the increase in the ratio of the ICT capital stock to the number of hours worked. Movements in this ratio are closely linked to movements in labour productivity, other things being equal.

<sup>46</sup> Ottaviano, G., Hassan, F., (2013). *Productivity in Italy: The great unlearning*, VoxEU.

### **Forms of financing: venture capital and private equity**

The lack of development of alternative forms of financial intermediation, such as *venture capital* and private equity, may negatively influence the start-up of new innovative business ventures and the productivity growth of existing companies.

The literature on the subject is extensive. For example, Croce et al. (2013) show that following a first round of financing by a *venture capitalist*, the beneficiary company experiences an average increase in labour productivity of 2.2 percentage points in the year immediately following the financing.<sup>47</sup> Similar results are also obtained in other academic studies, again focusing on European markets such as Spain, see Alemany and Marti, (2007).<sup>48</sup> Such results are also found when studying the effects of financing through private equity funds.<sup>49</sup> A more significant presence of such markets, therefore, could facilitate innovation and thus bring important benefits to the production system, both because of the '*scouting*' role played by the managers of such funds, who thus favour access to financing for already selected and potentially more innovative and productive firms, and because of the '*coaching*' role that *venture capital* funds often play with the financed firms.<sup>50</sup>

### **Conclusions**

To summarise, some of the causes of the productivity trend in Italy can thus be found in low public and private investment, particularly in research and development, in uncompetitive and undervalued human capital, in the average size of Italian companies, in the technological backwardness and in the insufficiency of alternative forms of financing entrepreneurial activity (such as *venture capital* and *private equity*) compared to the more traditional ones. It is also important to emphasise how these causes are compounded by the not always high efficiency of the public sector, which translates into a reduction in business productivity in the private sector.<sup>51</sup>

In light of the above considerations, the plans drawn up by Italian governments for the coming years appear even more worthy of attention. Specifically, the reforms envisaged in the National Recovery and Resilience Plan appear instrumental in overcoming some of the impediments described (refer, for example, to the reform of the public administration). Added to this is the commitment to use substantial economic resources that, besides acting as a stimulus to aggregate demand in the short term, represent an important opportunity to boost the productivity of the economic system in the medium and long term.

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<sup>47</sup> Croce, A., Martí, J., Murtinu, S., (2013). The impact of venture capital on the productivity growth of European entrepreneurial firms: 'Screening' or 'value added' effect?, *Journal of Business Venturing*, Volume 28, Issue 4, <https://doi.org/10.1016/j.jbusvent.2012.06.001>.

<sup>48</sup> Alemany, L., & Marti, J. (2007). Productivity growth in Spanish venture-backed firms. In *Venture capital in Europe* (pp. 101-114).

<sup>49</sup> Croce, A., & Martí, J. (2016). Productivity growth in private-equity-backed family firms. *Entrepreneurship Theory and Practice*, 40(3), 657-683.

<sup>50</sup> Colombo, M. G., & Grilli, L. (2010). On growth drivers of high-tech start-ups: Exploring the role of founders' human capital and venture capital. *Journal of business venturing*, 25(6), 610-626.

<sup>51</sup> See Giordano, R., Lanau, S., Tommasino, P., & Topalova, P. (2020). Does public sector inefficiency constrain firm productivity? Evidence from Italian provinces. *International Tax and Public Finance*, 27, 1019-1049.



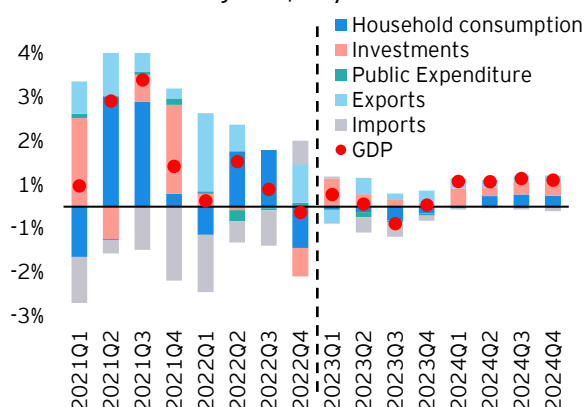
# The Italian economy: GDP and EY forecasts

In the fourth quarter of 2022, GDP fell by 0.1% compared to the previous quarter, and grew by 1.4% compared to the same quarter of 2022. This breaks the expansion of economic activity of the previous seven quarters, although on a year-to-year basis it was the eighth consecutive month of growth.

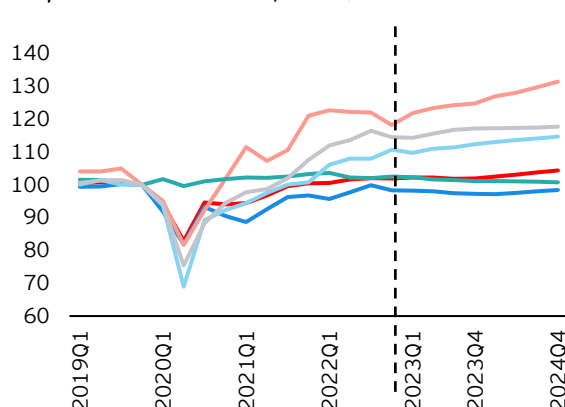
An analysis of the quarterly trend shows that the fourth quarter was characterised by a strong reduction in household consumption (-1.6%) and an even stronger retreat in investments (-3.3%). Domestic demand was partly replaced by foreign demand: exports showed strong dynamics (+2.6%), which, together with a reduction in imports (-1.7%), partly reduced the negative effect of the drop in consumption and investments.

Interestingly, the reduction in household consumption has halted its progression towards a return to pre-pandemic levels. Indeed, household consumption is the only one of the five components of GDP analysed (household consumption, investment, government spending, exports and imports) that has not yet returned to pre-pandemic levels.

Contributions to GDP growth, Italy



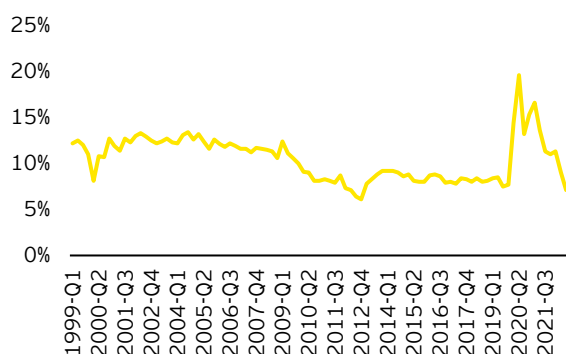
Components of GDP - index, 2019Q4=100



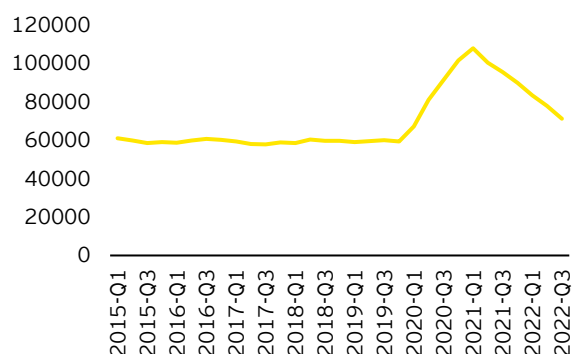
Source: EY elaborations on Eurostat data. EY forecasts start from 2023 Q1. Investment refers to fixed investment, which includes gross fixed capital formation, changes in inventories, acquisitions less disposals of valuables and depreciation.

Considering the weight of the household consumption component in the overall performance of the Italian economy (around 60%), it is interesting to investigate what may have been the main factors moving them in recent quarters.

Gross savings rate of consumer households, Italy



Gross savings (mln €) - 4-period moving average



Source: EY elaborations on ISTAT data. Last available data: 2022 Q3.

An important element in the analysis of consumption trends is certainly the savings rate.<sup>52</sup> The pandemic pushed Italian households to save more, as they were unable to maintain their spending habits due to the containment measures applied to reduce the spread of the virus. In this regard, it is interesting to note how the savings rate reached its peak during the pandemic (around 20% of households' gross disposable income), and then moved back to values in line with the historical trend in the following quarters. A fall in the savings rate was followed by a reduction in the gross savings of households, which returned to pre-pandemic values levels.

Savings accumulated in past quarters acted as a support for consumer household spending in 2021, although recent increases in energy prices and inflation had a negative impact on consumption trends.<sup>53</sup>

Still talking about inflation, it is also important to consider how the increase in prices mainly affects households in the first quintiles of the income distribution, i.e., those households with lower incomes. Analysing the composition of household consumption by income quintiles, the expenditure on food and energy, i.e., the components that have seen the biggest price rises, represents a higher percentage of total expenditure for the first quintiles than for households in the fourth and fifth quintiles.<sup>54</sup> Specifically, for households in the first quintile, food expenditure accounts for roughly 26% of total expenditure, compared to 14% for the fifth quintile; another example is energy expenditure, which, for the first quintile, accounts for 12% of total expenditure, compared to 7% for households belonging to the fifth quintile.

Moreover, households in the first income quintiles have a higher propensity to consume than households in the higher income quintiles, which is why high inflation and uncertainty about the future may play an important role in reducing consumption.<sup>55</sup> For this reason, targeted programmes to support these lower-income households may result in a greater impact on growth rather than generalised interventions on consumer households as a whole.<sup>56</sup>

Based on the information in the previous sections and the latest available data, it is possible to outline the outlook for the Italian economy for the coming quarters.

<sup>52</sup> The propensity to save, or savings rate, is expressed as the percentage ratio of gross savings to gross disposable income adjusted for the change in households' net entitlements to pension funds' technical reserves. Its complement to 100 is the propensity to consume, defined as the percentage ratio of final consumption expenditure to gross disposable income. For more information, see <https://www.istat.it/it/files/2014/04/Nota-metodologica.pdf>.

<sup>53</sup> Felici S., Rapacciuolo, C., How are Italians' savings doing? <https://lavoce.info/archives/99685/gli-italiani-tornano-a-risparmiare/>.

<sup>54</sup> Is the Italian economy still resilient to uncertainty and shocks?, Forecast Report - Centro Studi Confindustria, Autumn 2022.

<sup>55</sup> Fisher, J., Johnson, D. S., Smeeding, T. M., Thompson, J. P., (2019). Estimating the marginal propensity to consume using the distributions of income, consumption and wealth, Working Papers, No. 19-4, Federal Reserve Bank of Boston, Boston, MA

<sup>56</sup> Carrol, C., Slacalek, J., Tokunaka, K., White, M. N., (2017). The distribution of wealth and the marginal propensity to consume, Quantitative Economics 8 (2017), 977-1020.

EY's econometric model estimates that after the slight slowdown in economic activity experienced in 2022 Q4, mainly due to weak household consumption, 2023 Q1 will be characterized by a modest growth. This will be mainly driven by the positive trend in investment, with consumption almost flat after the negative performance of the previous quarter. In the following three quarters, Italian growth will benefit from the positive trend in net foreign demand, mainly due to a slowdown in imports in 2023, which will then be driven by a recovery in world trade in 2024. According to EY estimates, net foreign demand and investments will represent the engine of Italian growth in the coming years. The investment component will be supported mainly by public investment and by the resources of the NRRP, which in turn will also act as an incentive for the private sector, stimulating private investments. Household consumption, on the other hand, will experience a small contraction, followed by a modest growth in 2024.

With reference to the labour market, the unemployment rate will reduce in 2023 and 2024, moving away from the values recorded in 2020 and 2021, falling below the 8% value. Inflation estimates are also improving and are expected to decline in 2023 and then fall significantly in 2024, although they will show some persistence.

EY's forecasts indicate a 0.5% real GDP growth in 2023 for Italy and 1.3% in 2024, while the inflation rate is estimated to move from 6.7% in 2023 to 3.1% in 2024.

**Table 1: Italian economic forecasts**

	2020	2021	2022	2023	2024
<b>GDP, % var.</b>	-9.0%	7.0%	3.8%	0.5%	1.3%
<b>Households' consumption, % var.</b>	-10.4%	4.7%	4.6%	-0.2%	0.1%
<b>Total investments, % var.</b>	-8.0%	18.6%	9.7%	3.2%	2.2%
<b>Exports, % var.</b>	-14.3%	14.1%	10.2%	2.7%	2.5%
<b>Imports, % var.</b>	-12.7%	15.3%	12.5%	1.6%	1.3%
<b>Unemployment rate, %</b>	9.4%	9.5%	8.1%	7.9%	7.8%
<b>Consumer price index, % var.</b>	-0.1%	1.9%	8.2%	6.7%	3.1%
<b>Deficit, % of GDP</b>	9.3%	7.2%	5.7%	4.6%	3.7%
<b>Public debt, % of GDP</b>	155.0%	150.0%	144.7%	143.2%	141.0%

Source: Forecasts from EY Italy's Macroeconometric Model, 'HEY-MoM'. The area in grey represents the forecast horizon. Changes in GDP and its components are calculated on values in real terms.

Public deficit is expected at 4.6% in 2023 and 3.7% in 2024, with public debt continuing its descent from the peaks of the pandemic crisis, falling towards 143% of GDP in 2023 and 141% in 2024. Economic and price growth will play a key role in reducing the public debt ratio, also due to 'nominal' factors (e.g., an increase in the value of tax revenues).

The outlook remains subject to a scenario of high uncertainty and therefore presents significant risks, mainly related to the global macroeconomic environment, both downward and upward.

## The impact of a partial implementation of the NRRP

The aforementioned forecasts assume the actual implementation of the reforms and projects envisaged in the National Recovery and Resilience Plan (NRRP), considering that projects and investments will be in line with what has been shared with the European authorities and presented in the latest Update Note to the Economic and Financial Document.<sup>57</sup>

Although the purposes of this paper is not to estimate the impact of the structural reforms linked to the NRRP, which refer to several critical issues such as justice, public administration and the labour market, other studies have shown that the effect of these reforms on growth is significant, especially in the medium and long term: indeed, these reforms are expected to have a cumulative impact on GDP of 3.4% in 2026 compared to a no-implementation scenario, and 10% in 2050.<sup>58</sup>

However, if we take into consideration the initial investment plans of the NRRP resources and compares it with what has actually been done over the last three years (2020-2022), it can be noticed how projects initially hypothesised has not been effectively matched in the first years of implementation, thus forcing a reorganisation of the expenditure itself. See, for example, the difference between the resources programmed in the Economic and Financial Document (DEF) of April 2021 and those programmed in the Update Note to the DEF of September 2022, shown in the table below.

**Table 2: Allocation of NRRP resources**

	2020-21	2022	2023	2024	2025	2026	Total
<b>DEF 2021 (bn €)</b>	18.5	28.7	38.7	41	34.2	30.4	191.5
<b>NADEF 2022 (bn €)</b>	5.5	15	40.9	46.5	47.7	35.9	191.5
<b>Difference (bn €)</b>	-13	-13.7	2.2	5.5	13.5	5.5	0

Source: Economic and Financial Document (DEF) 2021 and Economic and Financial Document 2022 - Update Note (NADEF). Values as of 2021 have been recalculated from the figures shown as percentages of GDP. The cells in grey represent expected investments in future years, while those in white represent investments made.

Given the scale of the investments and the uncertainty that remains about the ability to invest the available resources, it is of interest to develop two additional scenarios to the one envisaged in the NADEF 2022: specifically, two alternative scenarios to the baseline forecast are identified, which envisage

- Scenario 1: an increasing investment of resources over time, assuming that 70% of the resources planned for 2023 and 90% of those planned for 2024 are spent.
- Scenario 2: an investment in 2023 and 2024 of the available resources in line with what is currently invested in 2022, i.e., approximately 52% of the resources budgeted in the 2021 Economic and Financial Document<sup>59</sup> ;

We assume that resources are spent on public investments (estimated to be 62% of total resources), collective consumption (12%) and other expenditure categories (e.g., incentives of various kinds, 26%).<sup>60</sup>

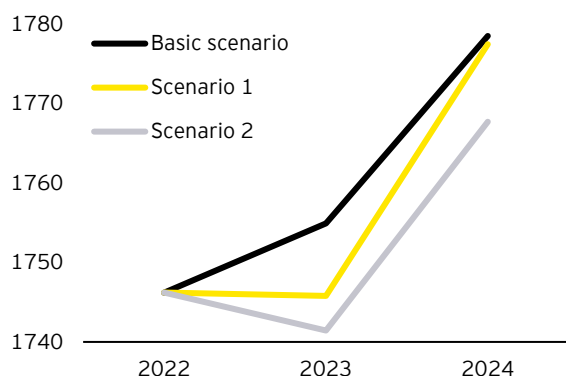
<sup>57</sup> Status Report on the Implementation of the National Recovery and Resilience Plan, October 2022.

<sup>58</sup> Structural Reforms in the Italian National Recovery and Resilience Plan: A macroeconomic assessment of their potential effects, Ministry of Economy and Finance, Working Papers No. 2, March 2023.

<sup>59</sup> Ratio between what was invested of the NRRP resources according to NADEF 2022 between 2020 and 2022 and what was budgeted in DEF 2021.

<sup>60</sup> For a breakdown by type of expenditure (investment, consumption or other) please refer to Working Paper No. 2 *A macroeconomic assessment of the Italian National Recovery and Resilience Plan*, March 2022, Ministry of Economy and Finance.

Real GDP, Italy (mln €)



Source: elaborations from EY Italy's Macroeconometric Model, 'HEY-MoM'.

In Scenario 1 (i.e., the case of spending NRRP resources at 70% and then 90% of forecast in 2023 and 2024), GDP is expected to be flat in 2023 and grow by 1.8% in 2024. In Scenario 2 (i.e., investment of the NRRP resources expected in the 2021 DEF at 52% for 2023 and 2024), the Italian economy would return to growth in 2024, at a rate of 1.5%, after a contraction of -0.3% in 2023. Therefore, as already mentioned, the resources of the NRRP are expected to be the real engine of Italian GDP growth in 2023, in a context of rising interest rates that discourage consumption and private investment. These investments will also have an impact on public finance in terms of a lower deficit depending on the scenario considered, with a simultaneous reduction in public debt.



# Assumptions behind the forecasts

The forecasts described above are based on a series of assumptions outlining the reference scenario.<sup>61</sup> Specifically, the following assumptions are considered:

- ▶ **International trade:** modest growth is assumed in the first half of 2023, with a subsequent acceleration in the last quarter of the year and a stabilisation in 2024, where international trade will return to growth at levels just below 3% (we refer to the definition of the CPB, Netherlands Bureau for Economic Policy Analysis);
- ▶ **Natural gas:** it is assumed that the price of natural gas (referred to the Dutch Title Transfer Facility) will be around \$23/mmbtu by the end of 2023, and will decrease slightly in 2024, stabilising at around \$22/mmbtu. This price is lower than the current price, but still significantly higher than the pre-war situation;
- ▶ **Oil:** the oil price is assumed to be in line with the latest quotations, around \$82 per barrel in 2023,<sup>62</sup> and is expected to keep the same levels in the following years;
- ▶ **Exchange rate:** the euro/dollar exchange rate is assumed to be 1.08;
- ▶ **Public expenditure:** the projections contained in the latest Update Note of the Economic and Financial Document of the Italian Ministry of Economy and Finance are taken into account;<sup>63</sup>
- ▶ **Monetary policy and interest rates:** a rising interest rate scenario is assumed, with the ECB's benchmark interest rate rising over the next few quarters to 3.75 per cent in 2023 Q4, and then gradually returning to 2.75 in 2024 Q4; the long-term interest rate (10 years) is expected to follow a similar trend, maintaining a constant differential of 1.5 points with the short-term rate;

Finally, considering the current scenario and the very high uncertainty, some downside and upside risks are listed below to support a more complete view of what might happen in the future:

## Risks to the upside

- ▶ **Reduction of tensions between Russia and Ukraine:** tensions related to the conflict may decrease faster than expected, thus reducing instability in the macroeconomic environment;
- ▶ **Wage and inflation:** low pressure on price from the wage component, reducing the risk of inflation rate persistence;
- ▶ **Lower energy prices:** a further decline in energy prices would result in a more pronounced reduction in the volatile components of inflation, with positive consequences for the Eurozone economies;
- ▶ **Monetary policy:** Immediate freezing of monetary tightening by the European Central Bank;
- ▶ **Faster readjustment of supply chains:** faster readjustment of European and global value chains would lead to less pressure along them, bringing with it greater security of supply and world trade;
- ▶ **Acceleration of domestic demand:** the growth of domestic demand, especially consumption, also thanks to a stronger labour market, could be more significant than expected if the recent declines in wholesale gas prices are prevented from passing on past increases in consumer prices and avoiding further reductions in real disposable income. The combination of a resilient labour market and sustained wage growth could, in fact, largely offset the erosion of purchasing power after the phasing out of fiscal support measures;

<sup>61</sup> The data are updated to 17 March 2023.

<sup>62</sup> Reference is made to the price of Brent.

<sup>63</sup> Economic and Financial Document Update Note, 2022 - revised and integrated version.

- **Reopening of the Chinese economy:** the full recovery of activity could stimulate foreign demand more than expected, reducing the likelihood of new supply disruptions caused by localised blockades.

## Downside risks

- **Rising tensions between Russia and Ukraine:** the conflict may not find a solution in the short to medium term, perpetuating geopolitical precariousness. In a particularly adverse scenario, this could result in a major war, and at the same time in a zeroing of Russian supplies to Europe and Italy;
- **Stronger-than-expected impact of restrictive monetary policy on the real economy:** the ECB and other global central banks may continue with a restrictive monetary policy for longer than expected in the event of persistent inflation in the various economies. This may result in a risk of prolonged low growth due to lower consumption and investment discouraged by high interest rates;
- **Stress in the financial system:** high interest rates can translate into increased stress for financial institutions, with a consequent impact on savers and a tightening of credit conditions, both in the US and in the Eurozone;
- **NRRP:** the failure to achieve the objectives of the NRRP and its partial implementation could slow down the pace of growth of investments, and thus of the Italian economy as a whole; the issue could also have repercussions on potential GDP and thus on medium- to long-term growth prospects;
- **Emerging economies:** risk of low growth, particularly in emerging economies, due to high commodity prices themselves and an appreciating dollar.<sup>64</sup> At the same time, a worsening of financial conditions in advanced economies risks translating into a concomitant worsening of financial conditions in emerging countries, given the 'tandem' movements of the relevant indicators experienced in recent months.<sup>65</sup>

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<sup>64</sup> Hofmann, B., Park, T., Tejada, A. P., (2023). Commodity prices, the dollar and stagflation risk, BIS Quarterly Review, March 2023.

<sup>65</sup> BIS Quarterly Review, March 2023.

# Technical Appendix

## HEY-MOM: Hybrid EY MModel for the Macroeconomy<sup>66</sup>

The construction of a new macro-econometric model required the optimisation of an inevitable trade-off between building a model that emphasises data information (such as the ARIMA and VAR models, which make no use of economic theory) or a model that only pays attention to the foundations on which its relationships are based (in the extreme case, the calibrated RBC-DSGE models that pay no attention to the data of their variables).<sup>67</sup> This trade-off has been emphasised several times in the literature, see for example the reflections in Granger (1999) and Pagan (2003).

In constructing HEY-MOM, an attempt was made not to neglect either of the above two ingredients (economic theory and data), in an attempt to produce a hybrid model with a careful balance in the specification of relationships (a) based on micro-founded economic behaviour and at the same time (b) careful in the application of rigorous statistical information evaluation techniques. An example of a hybrid model is MARTIN, the model currently in use at the Australian Central Bank (see Cusbert and Kendall, 2018).

In a nutshell, the role of HEY-MOM is to unify the analytical framework of macroeconomics in EY. In order to do so, the model refers to the main aggregates of the Italian economy, based on empirical data, non-monetary in nature, with explicit long-run relations between the variables it studies, and mainly oriented towards the definition of short-term forecasts (over a two-year horizon).

### Economic foundations

Rigidity in the movement of prices and wages implies rigidity in the speed with which macroeconomic systems adjust to unexpected shocks. Thus, on the one hand in the model market demand drives short-term fluctuations, as outlined by Keynesian theories, while in the long run supply determinants drive the state of the economy.

The long-run output (the potential of the economy) depends on the combined effect of trends in total factor productivity, labour supply and duration in hours and, finally, the capital stock. These factors are combined by a Cobb-Douglas-type technology with constant returns to scale. The demand for factors of production is that which minimises the cost given a planned level of output in the context of an economy in which oligopolistic forms of competition prevail, in which firms are free to set prices on the basis of a margin over labour costs and, at those prices, are prepared to collectively meet any level of market demand. Wages are defined on the basis of a 'Phillips curve' driven by the inertia of the inflation rate, labour productivity, and the distance between actual and natural unemployment rates (defined by the long-run state of the labour market). Actual output is composed of the following domestic and foreign demand items: private (household) and public consumption; private and public investment by type of asset (residential and non-residential buildings, machinery and equipment, and expenditure on research and development); imports and exports.

In each period, the gap between actual and potential output affects prices (through changes in margins) which, in turn, interact with the demand components. In this way, an equilibrium between supply and demand is achieved.

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<sup>66</sup> The model was developed in collaboration with the Department of Economic Sciences of the University of Bologna.

<sup>67</sup> "ARIMA" stands for "Autoregressive integrated moving average", "VAR" for "Vector autoregression", "RBC-DSGE" for "Real Business Cycle - Dynamic. Stochastic General Equilibrium".

## Data evaluation techniques

The speed at which the economic dynamics outlined above evolve over time is estimated using econometric methods based on the actual time series of the variables of interest in the model.

To this end, the model uses a combination of the London School of Economics approaches and Fair's (2004) review of the Yale Cowles Commission approach. The synthesis carried out in HEY-MOM uses cointegration methods (Engle and Granger, 1987, and Johansen, 1995) to estimate long-run relationships between non-stationary variables (Dickey and Fuller, 1979), which can be interpreted in light of economic theory and identified by state relationships whose parameters are estimated on the basis of error-corrected models (Hendry et al., 1984, and Pesaran et al., 2001). In the absence of exogeneity of some explanatory variables in the model, the relationships are first inspected following the instrumental variables estimation approach, and then definitively estimated at three stages (Hsiao, 1997).

The overall result is a model composed of 74 equations, of which 29 are stochastic and 45 are accounting identities. The forecasts and analyses performed are conditional on the delineation of scenarios for 65 exogenous variables that can be classified as: fiscal and monetary policy instruments, foreign bloc, and economic indicators.

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