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ITALY'S ECONOMIC OUTLOOK 2025-2026

■ Italian GDP is expected to grow by 0.6% in 2025 and 0.8% in 2026, following a 0.7% increase over the previous two years (Table 1)

■ The increase in GDP over the two-year forecast period would be entirely supported by domestic demand net of inventories (+0.8 and +0.9 percentage points, respectively), while net foreign demand would contribute negatively in both years (-0.2 and -0.1 p.p.). The forecast scenario for net foreign demand assumes a reduction in the climate of uncertainty surrounding U.S. trade policy in the second half of 2025. Nevertheless, a negative impact of tariffs on global trade and international growth prospects is still assumed.

■ Private consumption is projected to continue growing at a moderate but steady pace (+0.7% in both years), supported on the one hand by the ongoing growth in wages and employment, and on the other hand curbed by a rising propensity to save. Investment growth, which accelerated in 2025 (+1.2%, up from +0.5% in 2024), is expected to benefit from the strong performance in the first quarter. However, a substantial stagnation is likely to follow in the second half of the year, before a slight further acceleration is recorded in 2026 (+1.7%), in conjunction with the final phase of the NRRP.

Employment, measured in terms of Full Time Equivalent (FTEs), would grow slightly faster than GDP (+1.1% in 2025 and +1.2% in 2026), albeit at a slower pace than in previous years, accompanied by a further decline in the unemployment rate (6.0% this year and 5.8% in 2026).

After the rise in prices between late 2024 and the early months of 2025, a more moderate inflation trend is expected over the year, supported by falling energy prices and weakening demand prospects. The increase in the household spending deflator in 2025 would be in line with these developments (+1.8%), followed by a slight further decrease in 2026 (+1.6%).

TABLE 1. FORECAST FOR THE ITALIAN ECONOMY- GDP AND MAIN COMPONENTS

Years 2023-2026, Concatenated values for demand components; year-on-year percentage changes and percentage points

	2023	2024	2025	2026
Gross Domestic Product	0.7	0.7	0.6	0.8
Import of goods and services (FOB)	-1.6	-0.7	2.1	2.2
Export of goods and services (FOB)	0.2	0.4	1.3	1.8
DOMESTIC DEMAND (INCLUDING INVENTORIES)	0.1	0.4	0.8	0.9
Residential household consumption expenditure and NPISH	0.4	0.4	0.7	0.7
Government Consumption	0.6	1.1	0.6	0.6
Gross fixed capital formation	9.0	0.5	1.2	1.7
CONTRIBUTION TO GDP				
Domestic demand (net of inventories)	2.3	0.5	0.8	0.9
Net export	0.7	0.4	-0.2	-0.1
Inventories	-2.3	-0.2	0.0	0.0
Household consumption expenditure deflator	5.0	1.4	1.8	1.6
Gross domestic product deflator	5.9	2.1	1.6	1.6
Compensation of employees per full-time equivalent	2.1	2.9	3.3	3.3
Full-time equivalent employment	2.4	2.2	1.1	1.2
Unemployment rate	7.5	6.5	6.0	5.8
Trade balance (level as % of GDP)	1.4	2.3	2.0	2.0



The International Framework

The global economy is slowing down, hindered by high uncertainty linked to international trade.

In 2024, global economic growth (+3.3%) was driven by stronger-than-expected momentum in China and a still robust performance in the United States. However, over the forecast horizon, a deceleration in the global economy is expected, followed by stabilisation in the following year (+2.9% in 2025 and +3.0% in 2026). This trend is being negatively affected by uncertainty fueled by continuous changes in U.S. trade policy and by heightened geopolitical tensions

Although global trade exhibited lively dynamics in the first quarter of 2025, also driven by the anticipated imposition of tariff restrictions, which prompted countries to accelerate their transactions, expectations point to a strong deceleration for the remainder of the year. The most recent forecasts from the European Commission estimate a significant slowdown in the volume of global trade in goods and services for 2025 (+1.8%, down from +2.9% in 2024), followed by a partial recovery in 2026 (+2.2%).

Moreover, the outlook for a global economic slowdown is exerting downward pressure on energy commodity prices (also restrained by increased supply).

According to the latest available data, the major economies recorded mixed performances in the first quarter of 2025. In China, GDP grew by 1.2% quarter-on-quarter (down from +1.6% in the previous three months), driven by the positive trend of the industrial sector, export performance, and fiscal and monetary stimulus measures. The slowdown in Chinese domestic demand and the uncertain trade outlook would weaken the country's growth expectations (Table 2).

TABLE 2. MAIN VARIABLES RELATING TO THE GLOBAL ECONOMY AND MAJOR ECONOMIES

Years 2024-2026, Levels and year-on-year percentage changes

	2024	2025	2026
Brent crude oil (dollars per barrel)	80.5	67.7	65.0
USD to Euro exchange rate	1.08	1.11	1.13
Global trade in volume*	2.9	1.8	2.2
GROSS DOMESTIC PRODUCT			
World	3.3	2.9	3.0
Developed countries	1.9	1.5	1.7
USA	2.8	1.6	1.6
Japan	0.1	0.7	0.6
Euro Area	0.9	0.9	1.4
Emerging and developing countries	4.3	3.9	4.0
China	5.0	4.1	4.0

Source: DG-ECFIN Spring Forecasts (2025) and Istat elaboration

* Global export of goods and services in volume

In the United States, GDP registered a slight contraction for the first time in three years in the first quarter (-0.1% quarter-on-quarter, down from +0.6% in the previous period), mainly due to a sharp increase in imports. The historically unprecedented rise in effective import tariff implementation, combined with considerable uncertainty stemming from trade policy, could negatively impact household consumption and investment decisions in the months ahead. For 2025, a slowdown in the U.S. economy is projected (+1.6%, down from +2.8%), followed by a stabilisation of the growth rate in 2026.

The euro area's GDP growth accelerated in the first quarter (+0.4%, up from +0.2% in the previous three months). At the national level, increases were recorded in both Germany (+0.2% quarter-on-quarter after -0.2% in the last quarter) and France (+0.1% after -0.1% in late 2024); in Spain, economic activity continued to grow at a higher pace (+0.6% quarter-on-quarter, down from +0.7% in Q4 2024).

According to European Commission forecasts, the euro area's economic activity is expected to grow at the same pace as in 2024 in 2025 (+0.9%), followed by an acceleration in 2026 (+1.4%). Trends would, however, be uneven across countries: in Germany, following two consecutive years of recession, GDP growth in 2025 would remain flat, before rebounding to 1.1% in 2026; in France, the expansion rate would halve this year (+0.6%, down from +1.2%) before recovering in 2026 (+1.3%); in Spain, finally, GDP would show a downward trend (+2.6% and +2.0% in 2025 and 2026 respectively, down from +3.2% in 2024).





Regarding international exogenous variables used by Istat to develop forecasts, the euro-dollar exchange rate exhibited significant volatility in the first five months of 2025, primarily due to persistent uncertainty. A technical assumption is adopted for 2025 and 2026, projecting May's average exchange rate throughout the forecast period; this results in a gradual appreciation of the euro against the dollar (Table 2).

Regarding major energy commodities, expectations of weaker global demand, combined with OPEC's decision to increase oil production starting in June, are exerting downward pressure on oil and natural gas prices, helping to reduce global inflation expectations. Additionally, for Brent prices, which stood at \$ 80.50 per barrel in 2024, a technical assumption of invariance is adopted throughout the forecast period, based on the average price in May 2025. Prices are expected to settle at \$67.7 per barrel this year and at \$65 in 2026.

Economic situation in the early months of 2025 and forecasts for the Italian economy

In the first quarter of 2025, following the weak trend of the second half of the previous year, GDP grew by 0.3% quarter-on-quarter (0.7% year-on-year), reflecting a positive contribution from domestic demand net of inventories (+0.4 p.p.) and net foreign demand (+0.1 p.p.), while inventories had a negative impact (-0.3 p.p.).

Gross fixed capital formation was the most dynamic component of domestic demand in the first quarter of 2025 (+1.6% quarter-on-quarter); household and non-profit consumption expenditure also increased slightly (+0.2%), whereas public administration spending declined (-0.3%).

On the supply side, in Q1 2025, there were positive quarterly changes in value added in the industrial sector (+1.2%) and in the agriculture sector, while services saw a slight decrease (-0.1%). Within industry, construction showed slightly stronger growth (+1.4%) than the rest of the sector (+1.1%). Among services, artistic and entertainment activities saw a significant expansion (+2.3%), while financial and insurance services (-1.4%) and real estate activities (-0.9%) contracted.

In the first four months of 2025, surveys on consumer and business confidence indicated a progressive worsening, particularly regarding the economic trend, which was only partially offset by a rebound in May (Figures 1 and 2).

For consumers, in May the overall index shows a lower level compared to January (a difference of -1.7 points in the balances); among the components of the indicator, the deterioration is more evident in the economic climate (-3.5 points) and the future climate (-2.4 points), and less so in the personal climate (-1.0) and the current climate (-1.2), reflecting the high level of uncertainty characterising the evolution of the international scenario.

Among businesses, the decline in confidence appears more pronounced (-2.4 points difference in balances between January and May), but also highly uneven across sectors: the drop is more significant in market services (-4.3 points) and retail trade (-3.3), less so in construction (-2.0), and slight in manufacturing (-0.2). In the latter sector, however, over the same period, assessments of current production (-0.4 points) and expected production (-1.4), as well as future orders (-1.8) and, most notably, economic outlook (-5.0), remain below the levels recorded at the beginning of the year

FIGURE 1. GDP AND BUSINESS CONFIDENCE CLIMATE. Chained values and index base 2021=100



FIGURE 2. HOUSEHOLD CONSUMPTION AND CONSUMER CONFIDENCE CLIMATE. Chained values and index base 2021=100



Fonte: Istat

Fonte: Istat





The weakening in business and consumer sentiment was therefore influenced by the high uncertainty resulting from the succession of announcements regarding the imposition of tariffs on international trade.

However, Italy's foreign trade appears to have benefited both from contracts in the ship building industry, that have been scheduled for a long time, and from the "advance effect": the imminent implementation of tariff restrictions may have accelerated both imports and exports in Q1 2025 (+2.6% and +2.8% quarter-on-quarter, respectively for imports and exports).

In the forecast scenario, although these tensions are expected to ease gradually in the second half of 2025, they will still hurt the economic cycle, with more pronounced effects on investment and foreign trade, and to a lesser extent on household consumption. The latter would continue to benefit from the recovery in wages and employment, while being held back by uncertainty regarding the evolution of the economic cycle and the resulting increase in the propensity to save.

For 2025, the growth of capital accumulation, following the strong performance in the first quarter, is expected to be negatively impacted by the weakening of domestic and foreign growth prospects. However, on an annual average, it is still expected to register an increase compared to 2024. In 2026, a return to a positive growth path is projected, partly driven by investment contributions from the Transition 5.0 Plan and the implementation of projects under the National Recovery and Resilience Plan (NRRP). However, both programs are currently facing delays in their implementation. Further support could come from the continuation of the interest rate reduction process expected from the ECB.

The moderate trend in consumption and the solid conditions in the labour market are not expected to significantly affect inflation dynamics, which should remain consistent with the Central Bank's targets, also benefiting from the anticipated slowdown in the energy component over the biennium (as well as from the appreciation of the euro). The potential recovery from inflation remains contingent upon exogenous risks, depending on the global economic scenario.

In 2025, GDP is projected to grow by 0.6%, driven exclusively by domestic demand, which, net of inventories, would contribute positively by 0.8 percentage points, while net foreign demand would have a slightly negative impact (-0.2 percentage points). The expansion phase of the Italian economy would see a slight acceleration in 2026 (+0.8%), in line with a strengthening of the international cycle; again, the contribution would come from domestic demand net of inventories (+0.9 p.p.); foreign trade recovery is expected to be led by stronger import growth compared to exports, thus confirming a slightly negative contribution (-0.1 p.p.) from net foreign demand.

In this scenario, the trade balance would remain positive in both 2025 (2.2% of GDP) and 2026 (2.0%).

Moderate growth in consumption

In Italy, final national consumption increased by 0.6% in 2024; both household and NPISH (non-profit institutions serving households) spending, as well as government consumption, contributed positively to GDP growth (by 0.2 percentage points). Final consumption expenditure by resident households grew by 0.4% in volume terms (+0.3% in 2023). Across the domestic economy, consumption spending on services increased by 0.4%, and on goods by 0.6%.

In the first quarter of 2025, the contribution of final national consumption to GDP growth remained positive, albeit more limited, driven by household and NPISH spending (0.21 percentage points), while public administration expenditure made a negative contribution (-0.1 percentage points).

Final national consumption spending grew moderately on a quarterly basis (+0.1%), slowing down compared to the two previous quarters and lagging behind the increase observed in Spain (+0.4%) and Germany (+0.2%). In contrast, France recorded a negative quarterly variation in Q1 2025 (-0.1%), despite having shown stronger consumption growth than Italy in 2024.

In Italy, household spending within the domestic economy increased by 0.2% quarter-on-quarter in Q1 2025, the same rate as in the previous quarter. The increase was supported by the growth in service purchases (+0.6%), continuing the expansion seen in 2024. Durable goods, on the other hand, showed a marked decline (-1.3%), confirming the slowdown that was reported in the previous quarter. Spending on non-durable goods remained flat, as seen in the fourth quarter of 2024 (0.0% and -0.1% respectively). Semi-durable goods continued to grow, albeit at a slower pace than in the previous quarter (+0.6%).





In 2025, private consumption is expected to grow by +0.7% compared to the previous year; this increase would be supported, on the one hand, by the rise in employment and per capita wages at a pace higher than inflation, and, on the other, would be negatively affected by the climate of uncertainty, with the ongoing recovery phase of the propensity to save. In 2026, growth is projected to stabilise at the same pace as in 2025. Public consumption is expected to increase at a steady rate over the forecast period (+0.6% in both 2025 and 2026), although it will slow compared to 2024.

Recovery of the capital accumulation process

In 2024, gross fixed capital formation in Italy grew at a moderate pace (+0.5% compared to the previous year). Compared to the main euro area countries, Spain recorded a significantly more substantial increase in the same period (+3%), while investment declined in France (-1%) and, above all, in Germany (-2.7%). Regarding GDP, the investment-to-GDP ratio in Italy decreased from 22.5% in 2023 to 22% in 2024, a share higher than that of Spain (19.5% in 2024) and Germany (20.9% in 2024), and slightly lower than in France (22.1% in 2024).

In the first quarter of 2025, capital accumulation showed a strong increase (+1.6% quarter-on-quarter, seasonally and calendar-adjusted), the highest among the main euro area countries. Spain and Germany also posted positive growth (+1.2% and +0.9%, respectively), while France remained flat. As to investment by type (Figure 3) in Italy, investment expanded across all significant categories: construction (+1.7% quarter-on-quarter), both residential (+1.7%) and non-residential (+1.8%); investment in intellectual property products (+1.7%); and investment in equipment, machinery, and weapons (+1.2%).

In the short term, positive signals come from quarterly business confidence surveys in the manufacturing sector, with a slight increase in capacity utilisation and improved expectations regarding liquidity and access to credit. However, these are counterbalanced by signs of stagnation in industrial production and the strong uncertainty linked to trade and geopolitical tensions, which could negatively affect both international and domestic growth prospects.

Investments, after performing well in the first three months of the year, are expected to stagnate in the second half of 2025. This trend would be negatively influenced by residential investments, due to the phasing out of construction incentives; uncertainty and the worsening of both domestic and international growth prospects would limit the contribution of investments in transport equipment. Conversely, investments in non-residential buildings are expected to grow, as they will benefit from the carry-over effect of the first quarter's performance and, to a lesser extent, from the implementation of measures under the NRRP. Considering these factors, the capital accumulation process is expected to show growth in 2025 (+1.2% compared to 2024). In 2026, a return to a further expansionary trend is expected, leading to a slight acceleration in the annual average figure (+1.7%). The investment-to-GDP ratio is forecast to remain essentially stable, at 21.9% in 2025 and 22% in 2026.

Foreign trade recovering

In 2024, foreign trade showed moderate growth, in line with the previous year's performance: exports of goods and services in volume grew by 0.4% (compared to 0.2% in 2023). This result was driven by a light decline in goods exports to foreign markets, offset by an increase in service exports, particularly boosted by the strong performance of the tourism sector.

Imports of goods and services continued to decline, though at a slower pace than in the previous year (-0.7%, compared to -1.6% in 2023); here too, the contraction in goods imports, caused by weak demand, was offset by an increase in service imports.

Overall, Italy's increase in the export of goods and services in 2024 was lower than that observed in France (+2.5%) and Spain (+3.1%), but higher than in Germany, where exports declined (-1.8%)

The weakness in goods and services imports was a common trend in Italy (-0.7%), France (-1.2%), and Germany (-0.7%), while in Spain, foreign purchases continued to rise (+2.4%).

At the beginning of 2025, Italy's trade showed a sharp increase affecting both goods and services (Figure 4). Exports of goods and services rose by 2.8% quarter-on-quarter and by 0.8% year-on-year. Imports also recorded a strong recovery both on a quarterly and annual basis (+2.6% and +4.3%, respectively).





FIGURE 3. TRENDS IN GROSS FIXED INVESTMENTS BY ASSET TYPE. Years 2023-2025, seasonally adjusted and chained data, index base Q1 2023=100





Despite an expected reduction in uncertainty related to trade tensions, a slowdown in global trade of goods and services is projected for the remainder of the year, as well as in Italian foreign trade. Over the forecast period, both exports (+1.3% in 2025 and +1.8% in 2026) and imports (+2.1% and +2.2%) are projected to increase. However, imports are expected to grow at a slightly faster pace than exports, also supported by the euro's appreciation against the dollar, resulting in a negative contribution to GDP growth in both 2025 and 2026 (respectively -0.2 and -0.1 percentage points).

Labour market conditions continue to improve

In the first quarter of 2025, the positive trend in the labour market continued, with quarter-on-quarter increases in both hours worked and full-time equivalents (FTEs) across the entire economy (+0.7% for both indicators). The improvement was widespread across sectors, strongest in services (+1.0% for both FTEs and hours worked), more moderate in construction (+0.4% and +0.6% respectively), while the industrial sector remained stagnant.

In April, for the second consecutive month, the number of employed persons remained substantially stable after a period of growth in previous months; the employment rate held steady at 62.7%. The unemployment rate declined to 5.9% (-0.2 percentage points compared to the previous month), while the number of inactive individuals increased (+0.3%), raising the inactivity rate to 33.2% (+0.1 percentage points).

In Q1 2025, the seasonally adjusted job vacancy rate for all companies with employees fell by 0.1 percentage points compared to the previous quarter, reaching 2.0%. This overall result reflects a decline in the industrial sector, which decreased to 1.8% (down 0.1 percentage points quarter-on-quarter). In the services sector, the vacancy rate remained stable at 2.1%. Similarly, among companies with at least 10 employees, the job vacancy rate showed a quarter-on-quarter decrease in the industry (-0.1 percentage points) and stability in the services sector. Furthermore, in May 2025, employment expectations worsened in the manufacturing, retail trade, and construction sectors, while improving only in the services sector.

In this context, FTEs' growth over the forecast period (respectively +1.1% in 2025 and +1.2% in 2026) is expected to outpace GDP growth. The unemployment rate is projected to improve in 2025 (6.0%) and continue to decline in 2026 (5.8%).

Price dynamics in deceleration

The year-on-year change in the Harmonised Index of Consumer Prices (HICP), according to preliminary data, was +1.9% in May (+2% in the previous month), in line with the euro area average. Compared to the other main countries in the area, the Italian figure is similar to that of Spain, lower than Germany (+2.1%), and significantly higher than that of France, which stands at considerably lower levels (+0.6% in May, the lowest level since the end of 2020).





Consumer inflation for the entire population (NIC), which had been rising since October, fell in May (according to preliminary estimates) to +1.7% (from +1.9% in April). On a month-on-month basis, price growth was flat (+0.1% the previous month), and the acquired inflation for 2025 remained at +1.4%. This trend is largely due to the decline in energy prices, which rose sharply from November 2024 to March, then fell in both April (-5.8%) and May (-1.9%). In contrast, food prices have recently increased (+0.8% in May, after +0.6% in April). Moreover, service prices, which had accelerated in the second two-month period of the year (+0.6% in March and +1.3% in April), recently slowed down (+0.2% in May), mainly due to falling prices in transport services (-1.7%).

Imported product prices, which had risen in the first two months of 2025, returned in March (the latest available data) to the level of December 2024. On a year-on-year basis, they increased by +0.6%, down from +2.2% in February, mainly due to a significant slowdown in energy product inflation (+2.5%, down from +12.8%). Over the forecast horizon, a slightly positive trend is expected, following two years of contraction.

Among entrepreneurs, the intention to maintain stable price lists over the next three months prevails, both in manufacturing (84.2% in May, up from 82.6%) and in market services (89.1%, up from 85.7%).

Based on these dynamics, and considering expectations regarding international commodity price trends and prospects for moderate growth in domestic demand, household consumption deflator growth is expected to reach +1.8% in 2025, with a slight deceleration in 2026 (+1.6%). The GDP deflator, also due to the trend in import prices, is projected to be lower in 2025 (+1.6%) than the consumption deflator, and to remain stable in 2026.

Revisions to the previous forecasting framework

The current forecast scenario provides an update for 2025, compared to the estimates published in December 2024, and introduces projections for 2026.

Compared to the December forecasts, the 2025 estimates have been revised downward for the price of Brent crude oil (-6.7) and the global trade growth rate (-1.3 percentage points), while the euro exchange rate against the US dollar has appreciated (+4.7%).

These revisions have led to a significant scaling back of Italy's foreign trade projections for 2025, with reductions in the growth rates for both imports and exports (by 0.6 and 1.2 percentage points, respectively).

The evolution of the external environment and the information derived from estimates of national accounts for Q1 2025 have led to a reallocation of contributions from the underlying aggregates. While investments were revised upward (+1.2 percentage points), household consumption was revised downward (-0.5 percentage points). As a result, the GDP growth estimate for 2025 has been reduced by -0.2 percentage points (from +0.8% to +0.6%).

The positive trend in the labour market in 2024 and the early months of 2025 led to a downward revision of the unemployment rate (-0.2 percentage points compared to the December forecast) and an upward revision of both full-time equivalents (FTEs) and wages (+0.3 and +0.7 percentage points, respectively). The recent containment of inflation, along with the changed international context, also contributed to a downward revision of the GDP and consumption deflators (by -0.6 and -0.2 percentage points, respectively).

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THE ISTAT MACROECONOMETRIC MODEL

METHODOLOGICAL NOTE

Introduction

This note describes the main features of the economic forecasting model developed by Istat: the Macro Econometric Model for Italy (MEMo-It)¹. The model includes 66 stochastic equations and 94 accounting identities with annual frequency, representing the Italian economic system by specifying behavioural equations for the economic agents (Households, Businesses, Public Administrations, and the Rest of the World). The time series of variables used in the model covers the period from 1970 to 2024. Where data were unavailable, ad hoc reconstructions of the missing data were carried out.

The theoretical approach used in constructing the model is neo-Keynesian. In the model, short-term economic growth dynamics are driven by demand factors, while in the long term, the economy tends towards equilibrium conditions represented by potential output. The interaction between aggregate demand and supply occurs through the price system, which reacts to deviations of the actual unemployment rate from the natural unemployment rate (NAIRU) and imbalances between actual and potential output (output gap). The model is structured into blocks, where the direction of causality in behavioural equations and the framework of accounting identities have been predetermined².

The specification and estimation of the model follow three successive steps: (a) analysis of the integration and cointegration properties of variables for individual equations or blocks of equations and assessment of weak exogeneity for blocks of relevant variables; (b) two-stage single-equation estimation of the model's variables to account for endogeneity and measurement errors in the explanatory variables; (c) combining the individual equations and blocks of the model with three-stage estimation of their parameters to take into account the covariance between error terms belonging to different stochastic equations.

The dynamic properties of the model are evaluated through a predefined sequence of shock exercises on certain exogenous variables relative to the baseline solution. These exercises are performed using deterministic and stochastic simulation techniques. The standard errors obtained during the three-stage estimation of the complete model generate the stochastic solution, allowing for the quantification of forecast uncertainty.

In its current version, the model offers an aggregate description of the economic system. Future research directions for the model's development will focus on explicitly representing the behaviour of different economic sectors and extending to intra-annual economic movements.

The rest of this note is organised as follows: the second paragraph describes the characteristics of the supply block, while the third and fourth paragraphs describe the price system and the labour market. The fifth paragraph illustrates the demand block broken down by individual agents. Finally, the sixth paragraph is dedicated to describing the model's database.

Supply

The supply side is integrated into the model by referring to the "Solow model," according to which the stocks of productive resources (capital and labour) and technological progress are the main determinants of economic growth. This forms the basis for estimating the level of potential output, which is defined as the sustainable output level without generating an increase in inflation. In the long run, the economic system converges towards the potential growth path determined exclusively by supply forces. In contrast, in the short run, it fluctuates around this path due to shocks generated by demand forces.

² The methodological foundations of the model follow the traditional approach of the Cowles Commission for Research in Economics (Klein, 1950; Fair, 2004), integrated with the fundamental works of Dickey and Fuller (1979), Engle and Granger (1987), Sims, Stock, and Watson (1990), and Johansen (1995) on estimation and inference with time series potentially generated by integrated and cointegrated stochastic processes; of Hsiao (1997a and 1997b) on the properties of estimators with instrumental variables in the context of non-stationary stochastic processes; and of Hendry, Pagan, and Sargan (1984), and Pesaran et al. (2001) on the importance of the dynamic specification of the model's equations.



¹ The forecasting model was developed by a research group at Istat under the scientific coordination of Professor Roberto Golinelli, full professor of econometrics at the University of Bologna, Department of Economic Sciences.



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These fluctuations are captured by the deviations of actual output (Y_{EFF}) from its potential level (Y_{POT}), which can be summarised through the output gap, defined by the following expression:

The gap between actual and potential output is inversely correlated with the gap between actual unemployment (*UR*) and structural unemployment (*NAIRU*), according to the following relationship (Okun, 1962):

$$GAP = -b (UR - NAIRU)$$

Imbalances between actual and structural unemployment and between actual and potential output generate price changes that help to rebalance the system.

In the model, potential output is measured following the production function approach, similar to the method suggested by the European Commission (see D'Auria *et al.*, 2010)³. The central assumption is that the potential supply of the economy can be represented by a Cobb-Douglas production function. Formally, this is expressed as:

$Y_{POT} = f_{POT}(K, LP, HTFP)$

where *LP* represents potential labour input, K is capital stock, and HTFP is the trend component⁴ of total factor productivity (Solow residual). Potential labour input is obtained by filtering out the cyclical component from actual employment. The potential capital stock, K, is estimated using the perpetual inventory method (Goldsmith, 1951). The central assumption is that the potential capital stock coincides with the actual stock, assuming it represents the full employment utilization of capital goods.

Prices and Wages

The mechanism for forming prices and wages drives actual demand for goods and services and employment to adjust respectively to the supply level (potential output) and potential employment, which in turn is defined by the interaction between *NAIRU* and a combination of labour force participation rate and demographic trends of the working-age population.

Using the "triangle" stylisation proposed by Gordon (1981, 1988), both the system's reference price variable (pivot) and per capita wages are affected by three main factors: (1) persistence, measured by their dynamics in previous years; (2) demand shocks, measured by the output gap and the excess of the actual unemployment rate over *NAIRU*; (3) other significant shocks, which in the Italian economic context include those arising from import prices, labour productivity shocks and labour market tensions during contract renewal phases.

The value-added deflator at factor cost (PV) is the model's pivot price:

$$dlogPV = f_{PV} (dlogPV_{-1}, GAP, WB/YU)$$

where *dlogPV*-1 measures inertia, *GAP* measures demand shocks, and *WB/YU* (the real labour cost per unit of output, calculated as the ratio between employee income and GDP at current prices) measures productivity and labour cost shocks. The equation for *PV* can also be interpreted as a New Keynesian Phillips Curve (NKPC, Galì and Gertler, 1999), where expectations are assumed to be *backwards-looking*⁵.

Nominal wage growth is explained by the household consumption deflator from the previous year (which implies backwards-looking inflation expectations), the unemployment rate, labour productivity, and a variable that measures labour market tensions during contract renewal phases⁶.

The import deflator is determined by the dollar price index of manufactured goods on international markets, Brent oil prices in dollars, and the nominal dollar-to-euro exchange rate⁷. Additionally, the inflation rate of the import deflator from the previous year measures a persistence component.

⁷ Before introducing the euro, the reference exchange rate was between the US dollar and the Italian lira.



³ See also De Masi (1997), Denis et al. (2006), and Giorno et al. (1995).

⁴ The trend components of the variables used are obtained using the Hodrick-Prescott filter (1997).

⁵ For a comparison between the triangle model and the NKPC, see Gordon (2011).

⁶ The wage equation is inspired by the work of Phillips (1958), with its specification modified here to account for the inflation rate; for a discussion, see Golinelli (1998).



The deflators of demand components depend on these variables and the average effective rates of indirect taxation, which are differentiated by value-added tax, other indirect taxes, and production contributions.

The Labour Market

The labour market block is represented by three equations defining labour demand, labour supply, and wages. The specification of labour demand derives directly from the production function (Hamermesh 1996 and 1999). Under the assumption of perfect competition, where the labour factor is remunerated based on the marginal product, the labour demand equation is obtained, which depends positively on output and negatively on the real wage. Consequently, private sector demand (*LDP*), expressed in terms of standard full-time equivalent (*FTE*), is defined by the following expression:

$$LDP = f_{LD}(Y, PY, \frac{WB}{LDD}, PV)$$

where Y is the value added at current prices, PY is the GDP deflator, WB represents the total amount of employee income at current prices before social security contributions, LDD defines the employee full-time equivalent expressed in terms of production capacity, and PV is the value-added deflator at factor cost.

The public sector labour input (\overline{LDG}) is exogenous. It follows that the total labour input (LD) used in the production process is composed of:

$$LD \equiv (LDP + \overline{LDG})$$

Labour market equilibrium is achieved through the interaction between supply and demand. The model considers demographic factors and the relationship between business cycle fluctuations and participation rates (Lucas and Rapping, 1969) by using the labour force variable in the definition of the supply function.

Labour supply is defined as participation rates disaggregated by gender (i = F, M). More precisely, the participation rate (*PART*_i) is specified as follows:

$$PART_i = f_{LS}(\overline{POP_u}, WIPC, EMPR_i, PCH)$$

where *POP*^{*i*} is the population aged 15 to 64, disaggregated by gender, *WIPC/PCH* represents real per capita wages (*PCH* is the private consumption deflator), and *EMPR*^{*i*} is the employment rate, which provides a summary measure of labour market conditions (Bodo and Visco, 1987). The two measures used in the model—standard full-time equivalent and resident employment—are consistent through a bridging equation. The unemployment rate is derived as an identity by combining information on resident employment and the labour force (supply function).

Demand

The model's demand side refers to economic agents' behaviour: Households, Businesses, Public Administrations, and the Rest of the World. Households spend on consumption and residential investments, accumulating real and financial wealth. Businesses purchase all other investment goods (machinery, equipment, and others). Public Administration spending directly influences final demand through public consumption and investments. The Rest of the World determines the external component of demand, represented by net exports, i.e., exports minus imports.

Households

The permanent income hypothesis is the theoretical approach to determining household consumption (Friedman, 1957). A similar approach for Italy has been adopted by Rossi and Visco (1995) and, more recently, by Bassanetti and Zollino (2008). Actual consumption (*CHO*) is therefore modelled as a function of disposable income, wealth (both real and financial), and the interest rate:

$$CHO = f_{CHO}(YDH, HWFA, HWDW, PCH, IRN)$$





where *YDH* is the disposable income at current prices; *HWFA* and *HWDW* are financial and real wealth, respectively, also at current prices; *PCH* is the consumption deflator and *IRN* is the nominal long-term interest rate.

The portion of disposable income not consumed contributes to real wealth accumulation. Additionally, the share of disposable income not allocated to consumption or residential investment (*IRO*) contributes to the growth of financial wealth. The two wealth stocks, valued at market prices, are modelled using a framework consistent with the permanent inventory approach (Goldsmith, 1951). The equations for residential investments, real wealth, and financial wealth are as follows:

$$IRO = f_{IRO}(YDH, PIR, IRN)$$

 $HWDW = f_{HWDW}(YDH, IRO, PIR, IRN)$

$HWFA = f_{HWFA}(YDH, CHO, IRO, IRN, COMIT)$

where *PIR* is the deflator for residential investments; *COMIT* is the stock market index, linking the dynamics of financial wealth not only to saved income not invested in real assets but also to capital gains/losses on securities.

Disposable income is defined as an identity, as the sum of various components related to the institutional household sector:

$$YDH = GOSH + WBH + IDH + SBH + OCTH - (SSH + DTH)$$

GOSH is the gross operating surplus, *WBH* is the total wages and salaries net of those from the rest of the world, *IDH* represents income from interest and dividends, *SBH* refers to net social benefits, *OCTH* stands for other transfers, *SSH* denotes net social contributions, and finally, *DTH* represents direct taxes paid.

Businesses

Businesses contribute to the model's stylised economic framework by investing in machinery, equipment, and other productive assets. These investments, expressed as a share of potential output, are influenced by factors such as persistence, the cost of capital, gross operating income (considered as a summary measure of profits and self-financing), and the degree of uncertainty (measured by the conditional volatility of business cycle disturbances).

The cost of capital represents the price of the productive services a capital asset generates. It is assumed to depend on the financing cost (or the opportunity cost of preceding an alternative investment in the case of self-financing), the economic depreciation of the capital asset during its period of use and the capital gains or losses arising from asset purchase price changes.

Public Administrations

The description of the public sector within the MEMo-It model follows an institutional approach. This is characterised by algebraic identities and relationships that stylise the accounting rules (SEC95) and the regulations governing the primary aggregates of the consolidated economic account of Public Administrations (PA).

The direct relationships between PAs and the rest of the economy manifest through their effects on total demand, driven by final consumption spending, public investments, and income from the public sector. PAs also influence prices through net indirect tax rates, unit labour costs via social contribution rates, and disposable income obtained through direct taxation and transfers.

Total PA expenditures are disaggregated into final consumption spending, production subsidies, interest payments, gross fixed capital formation, investment grants, and a residual exogenous variable capturing other expenditure items. The aggregate for final consumption spending consists of two components: direct spending and wage-related expenditures. The latter is derived from the per capita average wage in the public sector (estimated in the labour market block) and the number of public employees.

Both direct spending in volume and employee numbers are considered exogenous and serve as fiscal policy instruments. Public investments are also exogenous in real terms, with their deflator derived in the price formation block. Nominal social benefits are linked to the population's age structure and a price indicator. Production subsidies and investment grants are linked to the private sector's value-added investments through coefficients expressing the percentage contribution to the private sector.

Total revenues are disaggregated into social contributions, indirect taxes, direct taxes, and residual exogenous items. Social contributions are calculated as the sum of those paid by employers, employees, and self-employed workers, using specific effective average rates as the basis.





Indirect taxes include revenues from Value Added Tax (VAT), the Regional Tax on Productive Activities (IRAP), excise duties on mineral oils and derivatives, and a residual exogenous component. The model calculates indirect taxes using appropriate, effective average rates, considered exogenous. Revenues from excise duties on mineral oils and derivatives are computed using two equations: estimating the energy intensity of GDP (based on persistence and oil price in euros per barrel) and multiplying an exogenous effective average rate by energy consumption.

Direct taxes are the sum of revenues from personal income tax, corporate income tax, substitute tax on interest, other capital income, and a residual exogenous component. The substitutive tax on interest and capital income is estimated based on the previous year's revenue, GDP, interest rate changes, and new financial activities approximated by household savings.

The fiscal balance of PAs is calculated as the difference between total revenues and expenditures. Public debt stock is determined by subtracting the previous year's budgetary balance from the debt stock, adding an exogenous adjustment variable to account for factors affecting debt independently of the fiscal balance (e.g., financial transactions, changes in financial instrument values, privatisations). Interest payments are calculated by multiplying the average cost by the debt stock. The average cost of public debt is estimated based on short-and long-term interest rates.

Rest of the World

The specification of the external sector block is based on the accounting identity that defines the balance of transactions with the rest of the world:

$$ROWSALDO = (XO \times PX - MO \times PM) + (WB - WBH) + (APETIND - APUCP - TINDN)$$
$$+ ROWDT + ROWID + ROWSB + ROWOTH$$

where ($XO \times PX - MO \times PM$) represents the trade balance in value (XO and MO are export and import volumes respectively, PX and PM are their respective prices); (WB - WBH) are the net labour income from abroad, (APETIND - APUCP - TINDN) are the net indirect taxes, ROWID is the net capital income from abroad, ROWDT are the current taxes on income and wealth, ROWSB are the social benefits, and ROWOTH are the other transfers⁸.

The theoretical approach for determining the balance with the rest of the world in the model is grounded in literature (Lane and Milesi-Ferretti, 2011; Obstfeld and Rogoff, 2010). The volume of goods and services imports is specified by an equation reflecting the interaction between domestic demand and international factors.

$$MO = f_{MO}(DDO, PM, GAP)$$

where *DDO* is real domestic demand, *PM* is the imports deflator, and *GAP* measures the effects of short-term cyclical fluctuations.

The equation for export volumes is expressed as follows:

$$XO = f_{XO}(WDXXTR, ITXRXER)$$

where *WDXXTR* represents the value of global exports, and *ITXRXER* is the real effective exchange rate. Net capital income (which primarily includes profits and dividends) is derived through the following function:

$$ROWID = f_{ROWID}(APSALDO)$$

where *APSALDO* represents the balance of the Public Administration account. The inclusion of this variable is justified by the expectation that an improvement in the PA balance will reduce the risk premium (Lane and Milesi-Ferretti, 2011; Caporale and Williams, 2002), thereby enhancing the balance of capital income, primarily through a reduction in the interest component.

Finally, the equation for other transfers (encompassing the balance of public and private transfers, both current and capital account) is given by:

$$ROWOTH = f_{ROWOTH}(ITALIA)$$

where ITALIA approximates the share of Italian exports, which is assumed to have an inverse relationship with

⁸ The reference for compiling the Rest of the World accounts by Istat is the Balance of Payments prepared by the Bank of Italy, based on the concepts and definitions outlined in the 5th Edition of the International Monetary Fund's Manual. See Istat (2005), Part Two, Chapter 3 for more details.







The time series used for model estimation and the treatment of exogenous variables

The model was developed using 139 basic annual time series covering 1970 to 2024 as input. The model estimation process generates 222 variables, of which 157 are endogenous (66 stochastic and 91 identities), and 65 are exogenous (including nine scenario variables).

A significant portion of the input variables comes from national accounts, which, in February 2025, released estimates related to the general revision of the National Accounts - with 2021 as the reference year - agreed upon at the European level, introducing innovations and improvements in methods and sources.

To estimate the model's relationships, a reconstruction covering the period from 1970 to 1995 was carried out. This task was facilitated by the model's compact size, which does not include sectoral disaggregation in its current version. The reconstruction was conducted by leveraging information in a time series based on the previous classification of economic activities, with particular attention given to rebuilding chain-linked values for the variables in the macroeconomic framework. This effort extended the new national accounting aggregates used in the model for specification and estimation purposes back to 1970.

The forecasts were produced using demographic scenarios available on **demo.istat.it** for demographic variables and the assumptions outlined in the State Budget Forecast for 2025 for public finance variables.

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