ISSN: 2282-4189

LUISS

Research Center
for European Analysis
and Policy

Italian Productivity: An Underrated Story

Sergio De Nardis

Working Paper 5/2026

March 31, 2026

Italian Productivity: An Underrated Story

Sergio De Nardis

Abstract

In this paper we revisit the performance of Italian productivity over the last fifteen years. The need for a reinterpretation stems from a widespread representation of permanent weakness, which we deem inadequate given the available data. We consider multifactor productivity (TFP) in the market economy sector, whose dynamics underwent an upward reassessment in the latest ISTAT revision. This change, largely overlooked, has not been adequately appreciated. We show that the improvement in TFP over the course of a decade (between 2012 and 2022) is also visible in comparison with European partners. Italian multifactor productivity initially realigned with the trend of the major economies, only to then surpass them in the years surrounding the pandemic. We identify the reallocation of resources and the strengthening of the economic cycle as the main drivers of this process. The deteriorations of the last three years (2023-2025) have therefore not exposed and amplified a previous weakness, but rather have interrupted a prolonged, relatively positive phase. We also address the problem of international comparability of productivity data, caused by the different deflation methods adopted by national statistical offices. With regard to labor productivity, we highlight how alternative measures of GDP relative prices across countries lead to dynamics for Italy relative to Germany and France that differ from those deducible from the national accounts.

1. Introduction

Over the last three years (2023-2025), Italy's productivity has declined significantly. It has fallen more than in Germany. In France and Spain, however, it has increased. When considering these developments, it should be kept in mind (but is not) that the data for recent years are provisional and that statistical revisions in Italy have historically been characterized by a systematic upward bias (Cipolletta and De Nardis, 2025a). However, the revisions expected in the coming period (the final accounts for 2025 will be released in September 2027) are ordinary and, therefore, relatively small, likely not enough to reverse the negative trends observed so far. The next general revision, likely to significantly alter the time series of both the output (numerator) and input (denominator) values of productivity indicators, as in the last one in 2024, is yet to come (it will take place in 2029). It may not necessarily be as far-reaching as the previous one, depending on the depth of the changes (estimate methodologies, sources, and possibly accounting rules) that will be undertaken. The picture we must address is therefore that of a sharp contraction in Italy's productivity (both labor and multifactor), a trend that has been worse than in other economies. The causes must be sought and the dynamics monitored in the following quarters and years to determine whether the phenomenon is transitory or structural.

Note that we are referring to specific reasons for the decline in the last three years, not general causes of weak Italian productivity. This is because – unlike visions that identify an uninterrupted long-term trend of decline compared to European partners (for example, see the report of the Italian Productivity Board, *Rapporto annuale sulla produttività*, 2025) – we detect a discontinuity in recent results compared to the previous experience. Indeed, much has changed in recent years, both in the production structure (energy shock and changes in the relative prices of production factors) and in government policies (the so-called flat tax for the self-employed and tax and social security relief for employees). These are new elements (in the case of the tax wedge cut for dependent workers, the discontinuity is not in the measure, but in the context of the energy shock in which it occurs) compared to the previous situation, which are likely to impact incentives (discouragement from growth for the self-employed and more intensive use of labor for businesses) in a way that is unfavorable to productivity.

But was not the situation prior to the last three-year crisis already characterized by stagnant productivity, reflecting the economy's structural weaknesses, which the new penalizing factors have only exacerbated? The purpose of this contribution is to challenge this viewpoint. It is a challenge based primarily on the data, on what they say, on what has been overlooked, but also on their shortcomings. The focus will be not so much on 2023-25, but on what happened before. A prolonged phase—about a decade in our estimations—of strengthening total factor productivity (i.e., the technological progress index) that has not been adequately assessed and would indeed require analytical approaches opposite to those generally proposed. The starting question should not be "what went wrong" but "what went well" to account for a significant period of favorable performance in the temporal evolution of this indicator, even when compared with the major European economies. As mentioned, we focus on improving multifactor productivity, but we do not neglect labor productivity, whose performance has

been less impressive overall. With regard to this latter measure, we address the issue of the effective international comparability of data, not only in terms of levels but also in terms of dynamics. This is a problem well-known to practitioners, yet it is regularly dismissed as a non-issue when making productivity comparisons and taking the results of estimates of uncertain comparability at face value. We show, in particular, that the use of alternative measures of real value added (the numerator of labor productivity, but also of multifactor productivity) leads to different stories from those deduced from the national accounts. This evidence should at least raise some alarm bells when conducting comparative analyses across economies.

The paper is organized as follows. Section 2 discusses the acceleration in private sector total factor productivity that emerged following the recent Istat revision, a change largely overlooked or quickly dismissed as a mere statistical accident. Section 3 compares Italy's acceleration with the evolution of other major European economies to determine whether it is also confirmed in the context of the other countries. Some interpretative insights are offered in an attempt to explain what went well. Section 4 addresses the issue of cross-country comparability of productivity statistics, conditioned by differences in value-added deflation methods, demonstrating the significantly different trends in Italian labor productivity compared to other economies as derived from alternative measures. Conclusions are drawn in Section 5.

2. Total Factor Productivity: Silent Revision and Overlooked Acceleration

The starting point for this discussion is total factor productivity (TFP), or multifactor productivity. Based on specific assumptions (competitive markets, constant returns to scale, technical progress disembodied from production inputs), TFP can be expressed as the ratio of real value added to the appropriately weighted combination (a geometric mean) of the factors (labor and capital) that contribute to its creation. The weights consist of the distributive shares of labor and capital in the product, which, under the assumptions adopted, correspond to the elasticity of value added with respect to each input. It follows that TFP is nothing other than the weighted geometric mean of labor and capital productivity.[1]

Economists see multifactor productivity as a key indicator of the system's efficiency. It measures the portion of the increase in value added that exceeds (or falls short of) the growth attributable to the mix of capital and labor. In other words, it is the residual (which can also be negative) with respect to the contribution of production inputs, which is believed to represent a variety of key elements for economic development. According to the Istat definition, multifactor productivity "measures the effects of technical progress and other growth drivers, including innovations in production processes, improvements in work organization and managerial techniques, and improvements in the experience and education level of the workforce."[2] In similar terms, the aforementioned *Rapporto annuale sulla*

[1] $TFP = \frac{real\ value\ added}{labor^{labor\ share} \times capital^{capital\ share}} = labor\ productivity^{labor\ share} \times capital\ productivity^{capital\ share}$

[2] Istat (2025), our translation from the Istat report.

produttività states (in our translation) that multifactor productivity "captures the effects of economic growth not directly attributable to increases in observable inputs, such as innovation, technological progress, management quality, and work organization." This indicator, so important for estimating technological progress, underwent a significant revision in Istat statistics in 2025, particularly with reference to the private sector of the economy, which excludes public administration activities, as well as real estate services, the activities of domestic workers, and of international organizations. This is a large aggregate of the economy that, according to Istat data, accounted for 93% of total working hours and 74% of the economy's value added in 2024.

It is surprising that this revision has gone largely unnoticed.[3] Not a single productivity report or study—neither in Italy nor among foreign observers—has felt the need to account for it in the past year. The new data simply replaced the old ones, which were quickly discarded without explanation. The revision was essentially due to changes in the measurement of the capital stock, following new assumptions about the average lives of capital goods adopted on the recommendation of international statistical bodies.[4] The reason is technical, but it had significant consequences that should have been highlighted.

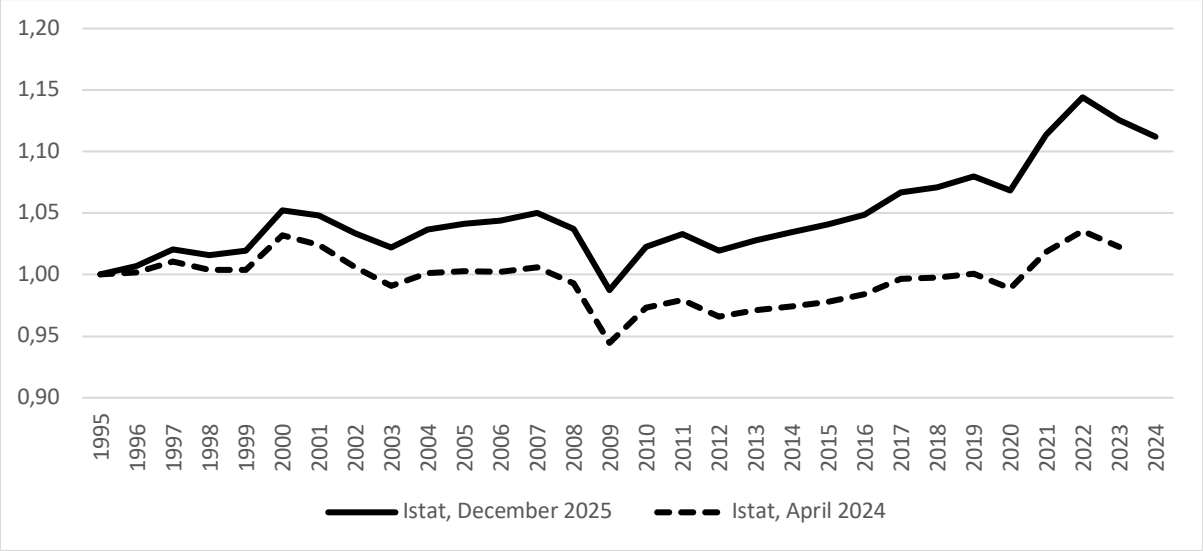
Figure 1 shows the Istat time series for the TFP before and after the revision. Until the April 2024 release, Istat statistics reported almost stagnant multifactor productivity for this sector of the economy and, therefore, a de facto absence of technological progress for a long period of about thirty years. Based on this evidence, arguments were made about Italy's irremediable technological backwardness—except for a minority constituted of exporters—induced by delays in innovation, organization, the regulatory/institutional framework, and the quality of the workforce. With the new data, this is no longer the case, and a different story emerges. In the second half of the thirty-year period (from the early 2010s to the recent deterioration), TFP accelerated. The private sector's technological progress indicator, far from stagnating, has strengthened. The least that can be said in this regard is that the reasons advanced to explain the prolonged flatness of the dotted line in Figure 1 cannot be the same ones to explain the growth of the last 10-15 years depicted by the solid line. The same "package" of explanations cannot be served unchanged. Others should be sought to explain not the phenomenon's weakness ("what went wrong"), but its strengthening ("what went well"). This work, in several influential analyses of productivity, has not been done.[5]

[3] The revision of multifactor productivity was released following the article by Cipolletta and De Nardis (2025a), which specifically addresses the issues of statistical revisions in national accounts. However, the authors discussed these new data in Cipolletta and De Nardis (2025b).

[4] The *Rapporto annuale sulla produttività* (2025) provides technical details of the capital services revisions, but does not discusses their implications for the TFP estimates.

[5] A notable exception to the general lack of attention in detecting the improvement of the TFP in the new data is constituted by the considerations of the Governor of the Bank of Italy (2025) and by some analyses contained in the Bank of Italy reports of 2024 and 2025.

Fig. 1 – Italy, Total Factor Productivity in Istat statistics: private sector (all industries excluding public administration and real estate, household and international organization activities, 1995=1)



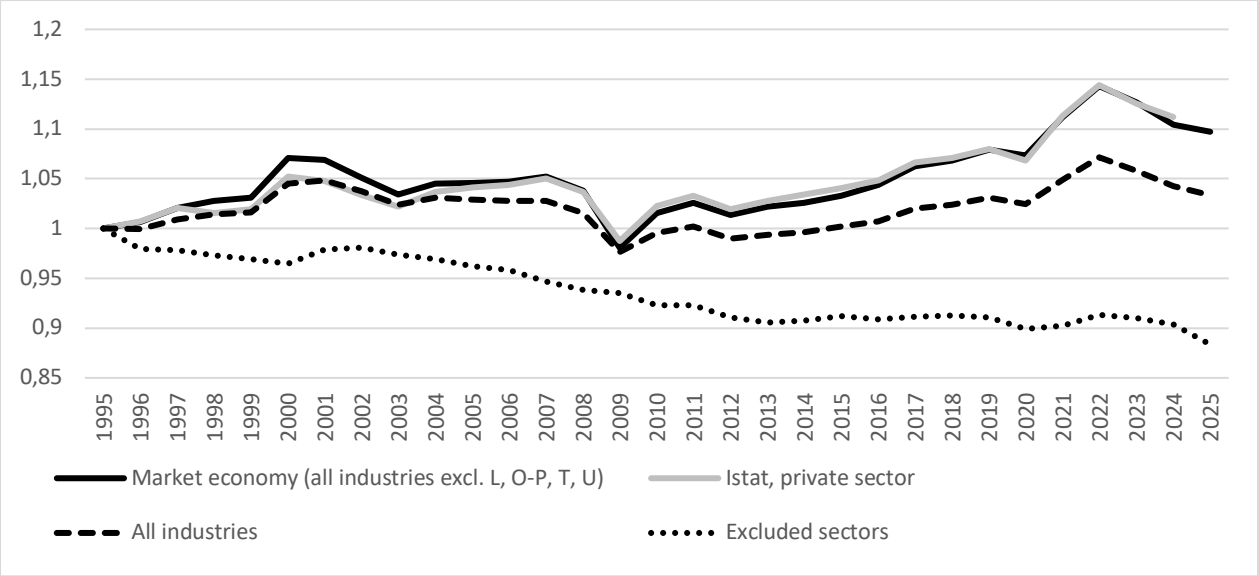
Source: computations based on Istat data

However, to properly assess the acceleration depicted by the solid line in Figure 1, it is necessary to examine what happened in other economies during the same period. If the major European countries we are comparing had experienced higher TFP expansions, the usual picture of Italy lagging behind, which persists even in positive phases, would recur. Istat does not provide TFP estimates for other economies referring to the same sector aggregate and based on the same methodology. We must therefore produce our own estimates not only for Italy, but also for Germany, France, and Spain, that is the countries we compare with Italy. These differ from Istat's estimates in two main respects. Since we do not have information on the extent of the scope of the general government in the sectoral national accounts for the various countries, the first difference with Istat concerns the economic aggregate for which TFP is estimated. In our assessment, it excludes real estate services (branch L), public administrations, defense, education, human health and social work activities (branches O-Q), activities of households as employers, undifferentiated goods- and services-producing activities of households for own use (branch T), and activities of extraterritorial organizations and bodies (branch U). This means it removes slightly more than Istat, especially with regard to labor input. The resulting aggregate, which we define as the market economy, constitutes (for Italy) approximately 80% of total working hours (compared to 93% for Istat) and 70% of total value added (73% for Istat). The second difference concerns the way we consider capital input, which we identify with the stock of fixed assets net of depreciation, as reported, for the various countries, by Eurostat statistics, while Istat estimates the flow of capital-productive services by aggregating the services generated by each specific type of capital goods.[6]

[6] Multifactor productivity estimates for the sectoral aggregate referred to in the text are generally available from Euklems, and therefore, one should not make one's own estimates. However, the most recent Euklems vintage is not usable for our purposes as it does not include the new estimate for capital and related services for Italy, which is the basis for the revision shown in Figure 1.

These differences do not have a significant impact. Figure 2 shows the TFP estimate we calculated (solid black line) and the Istat estimate (solid gray line): the differences are very small, especially over the last twenty years. The figure also shows the multifactor productivity estimate for the sectors we excluded (dotted line) and for the entire economy (all industries, dashed line). The negative performance of the excluded sectors, despite their rather limited weight, depresses the economy's productivity compared to that of the market economy. The gap between these curves becomes particularly wide starting in 2010.

Fig 2 –Italian TFP: all industries, market economy (all industries excluding L, O-Q, T, U sectors), and excluded sectors (1995=1)

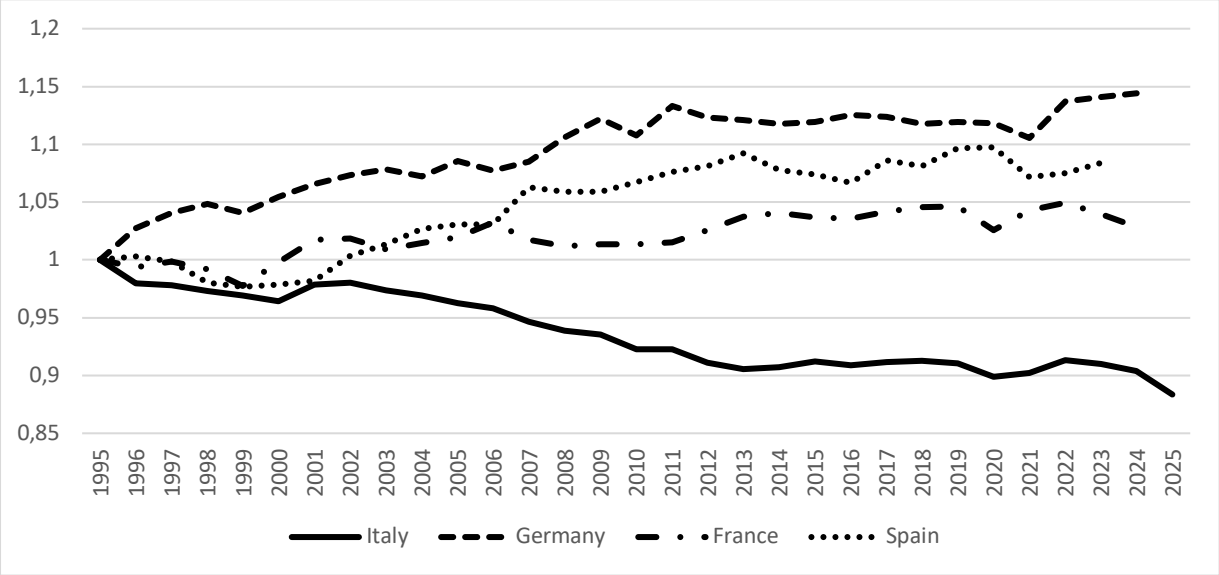


Source: computations based on Istat data

Interestingly (Figure 3), the performance of the TFP of the excluded sectors is significantly worse in Italy than elsewhere: it is declining in Italy's economy, while growing in other countries. These opposing trends end up amplifying the gap in productivity indicators for the entire Italian economy (all industries) compared to its European partners. Is this a sign of Italy's wide efficiency gap in sectors where the public sector is heavily involved? It is difficult to say due to the difficulties in measuring the real value added of these activities and the ways in which this problem is addressed. For example, to improve labor productivity statistics for collective services, it would be necessary – given the way the value added statistics for this sector are constructed –an increase (in real terms) in capital depreciation, which is the only component that can move the numerator independently of the denominator. The other component is employment, which co-determines the numerator (real value added) and the denominator in this sector. Similar difficulties are encountered in the public sectors of healthcare (where the number of patients discharged contributes to the definition of real value added) and education (number of students). Considering then the real estate services provided by the stock of residential housing (a key component of the real estate activities), in this case, improving productivity statistics would require an increase in the real value of imputed rents. It seems clear that changes of this kind have little to do with

actual variations in efficiency. It is, therefore, the limited significance of productivity statistics in these sectors that leads to their exclusion from assessments of country efficiency.[7] In the next section we will proceed with this comparative assessment for the four major European economies.

Fig. 3 – TFP of the excluded sectors in Italy, Germany, France and Spain (1995=1)



Source: computations based on Istat and Eurostat data.

3. Improvement of Italian TFP in the European Context: When, How, Why

Table 1 shows that over the entire period from 1995 to 2024, the average annual growth rate of Italian multifactor productivity in the economic aggregate we are considering (i.e., the market economy) was modest, along with that of Spain, compared with better performances in France and Germany.[8] The assertion of stagnant productivity would therefore be confirmed by the data referring to the entire thirty-year period. However, this time span encompasses different phases for Italy. After a period of weakness between 1995 and 2012, Italian TFP accelerated on average over the following twelve years (2012-2024), reaching a growth rate similar to that of other economies, with the exception of France, which experienced a slowdown. Therefore, the initial question—does Italy's acceleration hold even considering what its European partners have done? – has a positive answer: we can rule out the hypothesis that it is the "Italy of always," lagging behind even when things are going well. Instead, there has been a genuine improvement in multifactor productivity which, after the delays of the initial phase,

[7] The problem of determining real value added in public activities stems from the unavailability of price indicators that are formed in market transactions. Galli and Tucci (2025) highlight how the approximations used to circumvent this problem fail, for example, to detect productivity increases induced by waste reductions (turnover freeze in public administration) or qualitative improvements resulting from technology (healthcare). A similar problem arises for real estate services where the proxy used for nominal value added (largely imputed rents) is deflated with prices that are not formed in actual transactions; see Torrini (2016).

[8] The Eurostat national accounts data used in this work were extracted on March 20, 2026.

has settled into a trend essentially shared by the major European countries. It is this strengthening of the Italian technological progress indicator that is overlooked in many analyses, while its positive aspects should be explored precisely to understand "what went well" and whether the improvements can be replicated.

Tab. 1 – TFP: market economy (all industries excluding L, O-Q, T, U; yearly average % changes between the indicated years)

	1995-2024	*1995-2012*	*2012-2024*
Italy	0,3	*0,1*	*0,7*
Germany	1,1	*1,2*	*0,8*
France	0,8	*1,2*	*0,2*
Spain*	0,2	*-0,2*	*0,7*

* For Spain 1995-2023 and 2012-2023. Source: computations based on Istat and Eurostat data.

Suggestions for possible interpretative elements are derived by better focusing on the relevant phases within the periods considered in Table 1. This is what is done in Figure 4, which shows that Italy's TFP crisis actually occurred over a prolonged but well-defined period, namely between 2000 and 2012. Before that phase, between 1995 and 2000, Italian multifactor productivity was not an outlier among European countries (Spain, however, was).

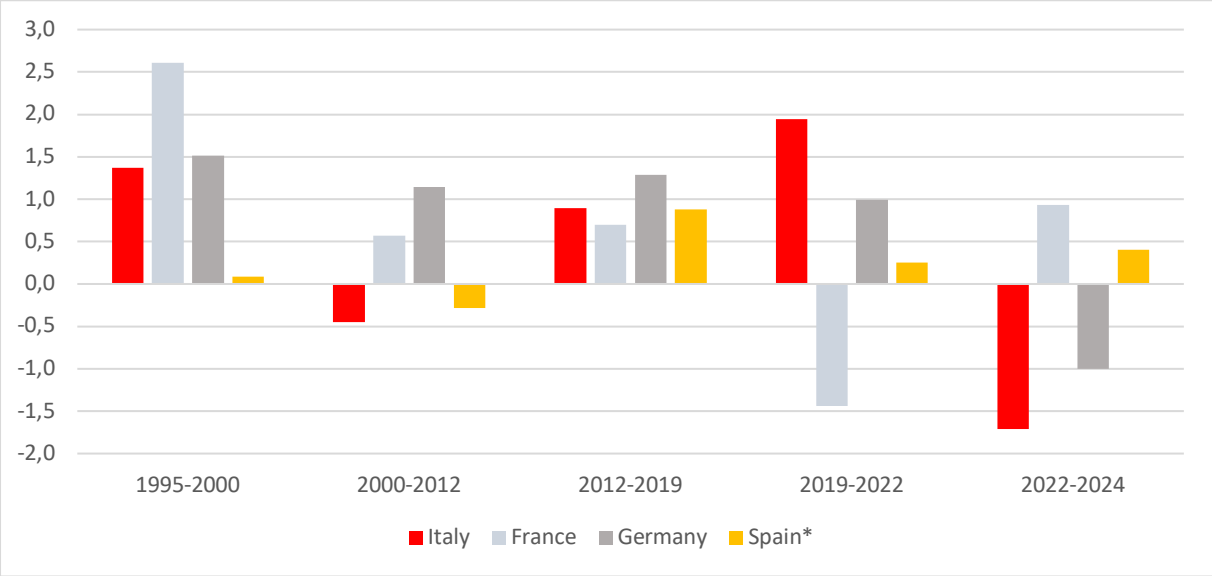
The Italian productivity crisis therefore materialized between 2000 and 2012, years marked by three successive recessions, interspersed with weak recoveries. Spain, which shares a similar economic situation to Italy, also experienced a decline during this period.

Subsequently, Italy's multifactor productivity began to expand again. This occurred during the debt crisis (in 2013) and continued into the subsequent, albeit limited, economic recovery. During this period (i.e., the seven years between 2012 and 2019), Italy's TFP returned to expanding at a rate similar to that of other European countries (Spain followed a similar trend).

After 2019, Italy's multifactor productivity dynamics strengthened significantly (almost 2% per year in the three-year period between 2019 and 2022, outpacing other countries), coinciding with the strong post-pandemic expansion, also driven by the aggregate demand stimuli of the fiscal and monetary policies pursued during that period.

The recent decline (in the three-year period between 2022 and 2024) therefore does not build on a previous phase of weakness, exposing the perennial structural ills of Italy's low productivity. Rather, it interrupts a prolonged period of expansion in multifactor productivity, which was overall in line with (and above for some years) Italy's European partners between 2019 and 2022.

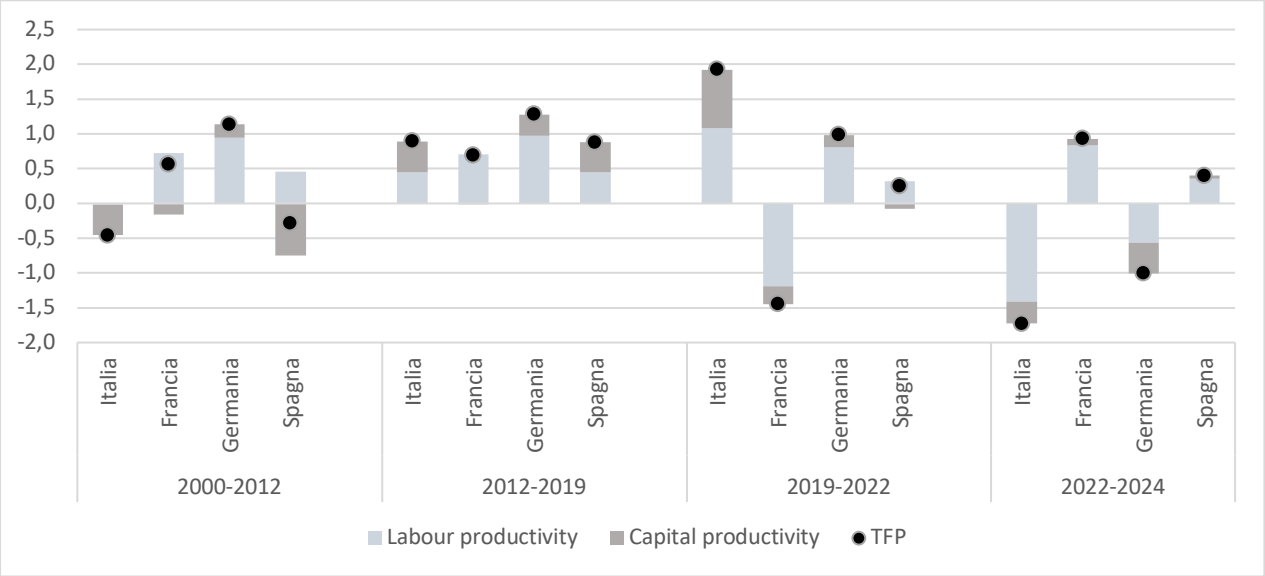
Fig. 4 – TFP, market economy (all industries excluding L, O-Q, T, U; yearly average % changes between the indicated years)



*For Spain 2022-2023. Source: computations based on Istat and Eurostat data

Given these dynamics, it is useful to examine which of the two TFP components (labor and capital) contributed to Italy's improvement after 2012. Figure 5 breaks down multifactor productivity dynamics into the contributions of the two inputs (corresponding to the changes in their productivity weighted by their respective distributive shares). It is interesting to note that the realignment (between 2012 and 2019) and subsequent overtaking (between 2019 and 2022) of Italy's TFP dynamics compared to its European partners was also achieved thanks to the contribution of capital productivity, which was larger than that found in other economies. The contribution of labor productivity has indeed strengthened, but without the contribution of capital productivity TFP dynamics would have been less robust.

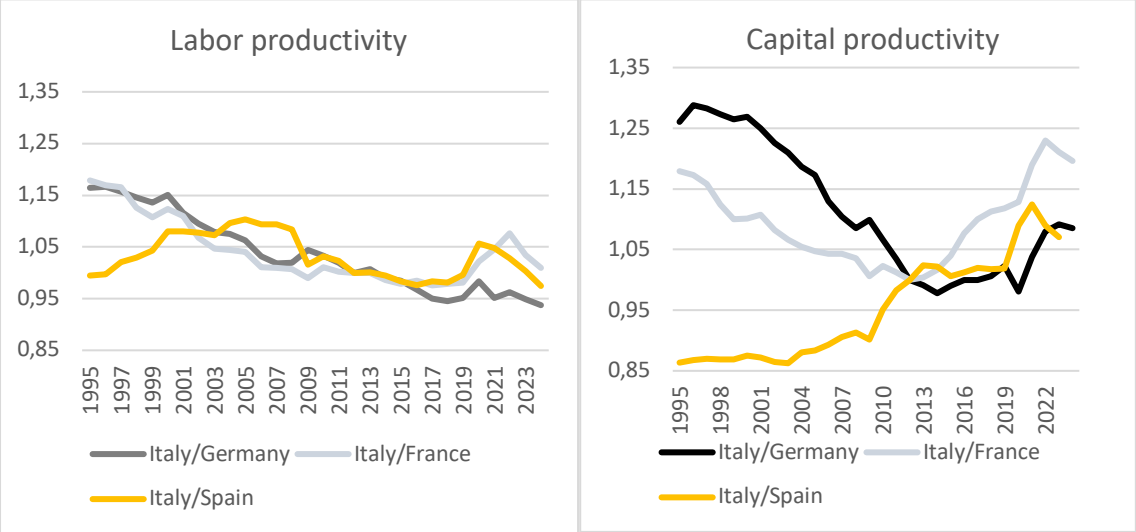
Fig. 5 – TFP and contributions of labor and capital productivity, market economy (all industries excluding L, O-Q, T, U; nat. log average changes x 100)



For Spain 2022-2023. Source: computations based on Istat and Eurostat data

The importance of capital efficiency in post-2012 dynamics is most evident when considering, in Figure 5, the unweighted dynamics of Italy's two input productivity relative to the performance of the countries considered. Capital is experiencing better efficiency performance than other economies. Labor productivity tends to align with that of France and Spain, but continues to slip compared to Germany.

Fig. 6 – Labor and capital productivity of Italy relative to the major European countries, market economy (all industries excluding L, O-Q, T, U; 2012=1)



Source: computations based on Istat and Eurostat data.

The timeline adopted in Figures 3 and 4 for the comparison with European countries offers insights into what has happened. We base them on the most interesting and (for the author) most convincing empirical literature that has been produced in recent years on the topic. On the grounds of these findings, it seems to us that the drivers of the Italian productivity recovery were essentially two: the reallocation of resources between firms (not between sectors) and the economic cycle.

The reallocation between incumbent producers (i.e., those that remained operational during the period considered) and, to a lesser extent, demographics (the replacement of "dead" production units with new, more efficient initiatives) actually supported aggregate productivity already during the double-dip recession (financial and sovereign debt crises). The shift of resources (labor, but one should also say capital) towards relatively more efficient incumbent firms has indeed been a constant driving force. This has been true in both manufacturing and services.

However, it was only during the "second" recession (we place the turning point in 2013) that the reallocation (as well as demographics) ended up being reflected in aggregate productivity growth, more than offsetting the negative effects of the economic cycle, the latter being evidenced by the persistent weakness in the average productivity of incumbent firms, particularly the smaller ones (Bugamelli et al. 2020, with particular reference to labor productivity dynamics).

Initially in this positive phase, the relative shift in resources occurred without any appreciable change in the size composition of firms (measured by the number of employed persons per production unit). Subsequently, since the middle of the last decade, reallocation processes have also been reflected in size changes, with a significant decline in employment among micro-enterprises (under 10 employees) and a simultaneous expansion in the macro-enterprise segment (over 249 employees). This has resulted in a selection process within the micro-firm population toward the most productive units (the average efficiency of this class has increased significantly) and, above all, stronger productivity growth in the macro-firm class (Bank of Italy 2024). The consolidation of the Italian production system has therefore been intensifying, while aggregate efficiency was fueled not only by improvements within all size classes, but also by a shift among manufacturing and various service firms across classes, particularly toward the larger ones characterized by higher levels and more marked productivity dynamics (*Rapporto annuale sulla produttività,* 2025). Particularly, it is in this phase that the effects of past reforms in the services sector began to manifest themselves, with improvements in efficiency indicators in trade and professional services (Bank of Italy 2025), a strengthening that became evident also when compared with the same sectors in other major European economies.

The influence of the economic cycle extends throughout all periods, curbing (most of the time, given the prolonged stagnation) or stimulating the favorable effects of reallocation and, in services, the reorganization induced by the reforms. In particular, the Italian cycle began to strengthen significantly in the post-pandemic period. In those years (2019-2022), growth in size continued (Bank of Italy 2025), accompanied by strengthening the financial position of firms. Productivity was driven not only by

reallocation processes, which are more effective in an expanding economy, but was also (finally) finding a significant boost in the contribution of the average efficiency of incumbent firms (Accetturo et al. 2025), i.e., the productivity component that was most affected, in former periods, by the prolonged weakness of the Italian economic cycle. In this phase, the driving forces were primarily those in the most productive deciles, with a greater participation of multinationals. During this period, the enlargement of the gap between the best and worst performing production units has been underlined (*Rapporto annuale sulla produttività*, 2025), meaning that improvements would have essentially reflected the performance of a relative minority of producers. It should be noted, however, that the widening range of heterogeneity in these years, likely impacted also by the freeze on reallocations during the pandemic, is not unique to Italy; it has also characterized other countries.

The deterioration in productivity over the last three years (2023-25) therefore appears to be a discontinuity in this time frame. This decline was influenced by changes in relative factor prices resulting from the energy shock (increasing costs of intermediate goods and capital), which pushed for an even more intense use of labor (Colonna et al. 2025). This phenomenon also affected other European countries, but Italy's persistent wage moderation (not seen in other economies) likely played a specific role in intensifying the use of its relatively cheaper labor. Furthermore, the consequences of the economic policy choices of the government that took office at the end of 2022, i.e., at the expiring positive decade of productivity, should not be overlooked. The flat taxation of the self-employed presumably pushes firms to fall below the turnover thresholds that allow them to access this favorable treatment, discouraging the growth of individual firms and their transformation into businesses with employees (Accetturo et al. 2025). At the same time, the decision to continue supporting, along the lines of previous governments, the net wages of employees (in the lower income brackets) through lower taxes and contributions likely constituted, in the midst of the energy shock, a key factor in wage moderation, slowing the realignment of labor costs (compensation of employees) with the price surge recorded for other productive inputs (intermediate goods and, with monetary tightening, capital).[9]

And how do Italy's historical structural weaknesses—firm size, which remains smaller than elsewhere (although the average size of companies has gradually become equal to that of France), management inadequacies in family businesses, low (formal) worker qualifications, and the gap in innovative investment in intangible assets (a gap that has, however, narrowed according to the latest data)—fit into this picture? Certainly, these factors largely persist, as the statistics indicate, but they have evidently had a lesser impact on the prolonged period of positive performance in Italian multifactor productivity, attenuated by reallocation processes and subsequently overcome during the phase of strong cyclical expansion. The central point of this discussion is that it is not the stagnation in productivity that

[9] Fiscal policies in recent decades have effectively countered the growing inequalities between income groups brought about by changes in the economic structure and labor market, as shown by Boscolo et al., 2026. As the cited work also suggests, this was an ex-post compensation of market outcomes that presumably interacted with wage bargaining, attenuating the pressure of demands for increased gross wages, the cost of which would have been borne by employers. We hypothesize that this phenomenon, which ultimately became structural with government reforms, also dampened gross wages during the energy shock, exacerbating the changes in relative factor prices it caused and thus pushing companies toward even more intensive use of labor.

emerged from the data prior to the Istat revision that should be explained, but rather a period of strengthening, also materialized in comparison with European economies. The reasons to be sought—and for which the empirical literature provides evidence—are those of the productivity recovery, prior to the recent deterioration, and not the persistent weakness.

But at this point, we need to pause and take a step back to discuss an even more fundamental problem that affects the evaluation of Italian performance: the international comparability of data. The discussion thus far assumes the statistics used to construct productivity indicators (TFP, labor, capital) "at face value," with the exception of activities where those measures clearly lack reliable meaning and have therefore been excluded. However, an analysis aimed at addressing Italian issues cannot avoid raising more fundamental questions, namely those regarding comparability across countries. In the next section we will address this issue by focusing on labor productivity.

4. Labor Productivity: Dynamics and Levels Do Not Connect

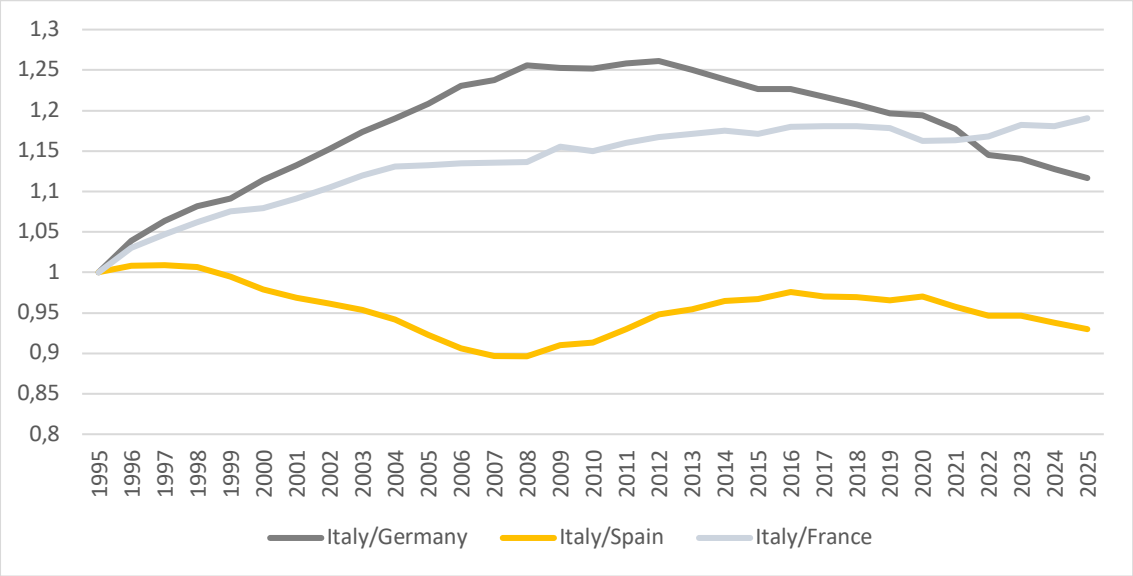
Any comparative analysis of productivity should recognize that there is an area of uncertainty regarding the effective international comparability of indicators constructed on the basis of national accounts, namely those we used for the previous discussion. This uncertainty arises from the different deflation methods of nominal values adopted by the statistical offices of various countries to determine volume estimates. The techniques—under the formal umbrella of Eurostat's general rules—are heterogeneous, particularly (but not only) with regard to the treatment of qualitative changes in goods and services.[10] France has long widely adopted hedonic price estimates in its accounts, while Germany makes limited use of them, combining them with other methodologies. Italy (similarly to Spain) is even more conservative in the use of hedonic estimates, preferring different approaches. The aim here is not to determine the best procedure for eliminating from price variations the qualitative improvements in goods and services, but to underline and take into proper account the lack of international homogeneity in the measurement of a variable (the deflator) crucial for determining the numerator (GDP or value added in volume) of productivity indicators. The following discussion considers the entire economy (all industries) because the available data can only be used at the most general level. However, the emerging problems pervade all productive sectors, directly involving the aggregate of sectors examined in the previous sections. These are therefore considerations that should always be kept in mind when discussing productivity gaps.

Figure 6 shows the Italian GDP deflator compared to that of other economies. One should ask to what extent the dynamics of the Italian GDP deflator compared to those of Germany and France (with respect to Spain, the evolution is within a limited margin of variability) reflect actual differences in inflation

[10] With reference to deflators in the manufacturing sector, see the analysis conducted by Romano and Traù (2020), as well as the considerations on comparability issues in Arrighetti et al. (2024). Note that the comparability issue, due to different deflation methods, was addressed a few years ago by the French statistical institute when observing the gaps of France with Italy (see Giraud and Quevat 2017). However, that input, coming from the very institute that bases its assessments mostly on hedonic prices, does not appear to have been taken up, activating further investigations, on the Italian side.

dynamics rather than effects due to heterogeneous statistical estimation methods. To address this issue, some evidence is provided below.

Fig. 7 – GDP deflator of Italy relative to Germany, France and Spain (all industries, 1995=1)



Source: computations based on Istat and Eurostat data.

When seeking alternative indicators to assess the performance of the GDP deflator, indices derived from sectoral surveys, such as consumer prices and producer prices (industry, construction, and, more recently, services), should be excluded. Indeed, they do not capture a broad range of goods and services that are comprised in GDP (as is the case with consumer prices) and, at the same time, include price components that are not included in the construction of its deflator, such as import prices (included in consumer prices) or intermediate input prices (included in the producer prices of the various sectors). Given these limitations, a useful alternative for assessing the relative evolution of the GDP deflator is purchasing power parities (PPPs), which (divided by the exchange rate for the period prior to the adoption of the single currency, i.e., before 1999) describe the differences in price levels among eurozone countries. For GDP, in particular, these indicators express the general price level of one economy relative to another. Since they are calculated uniformly across countries based on detailed prices of individual goods and services traded throughout the economy, these price indicators are exempt from the differences in deflation approaches that characterize national accounts.

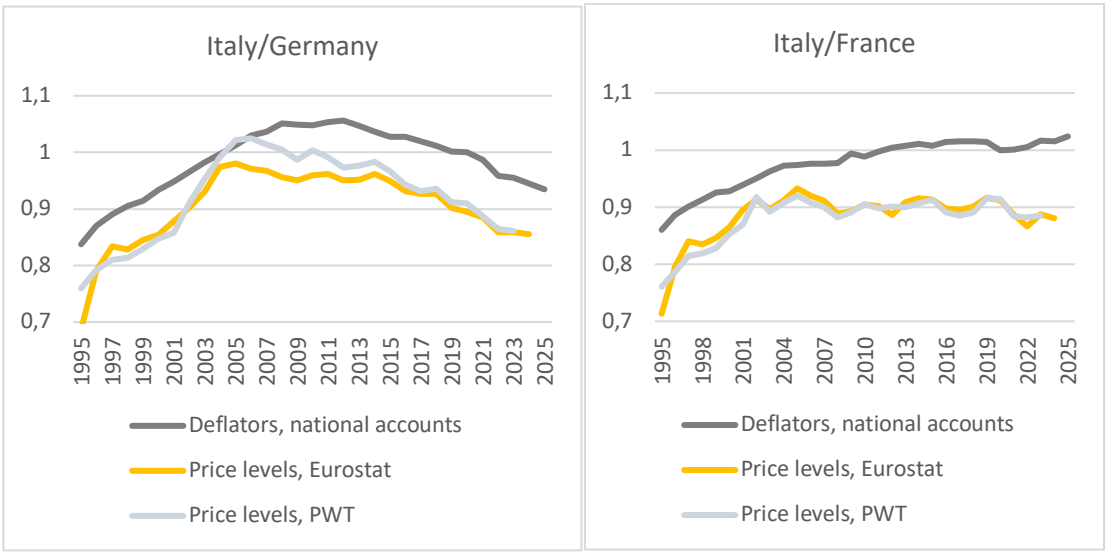
Figure 7 therefore shows, in addition to the relative dynamics of the GDP deflator for Italy compared to Germany and France, the price level ratios between Italy and the other two economies, calculated based on Eurostat estimates and the Penn World Table (PWT). The Eurostat figure is an expenditure-side estimate of price levels, useful for measuring differences in living standards across countries (defined by GDP per capita). The PWT figure, on the other hand, is an estimate of the price level on the production (output) side and aims to measure differences in the production capacities of economies.

This measure is therefore explicitly useful for determining the appropriate metric for making productivity comparisons across countries.[11]

As can be seen from the graphs, price level measures exhibit a different picture than the one based on deflators, particularly since 2004-2005. In this sense, relative dynamics (deflators) and levels of prices (based on PPPs measures) do not connect. Compared to Germany, a phase (between 2001 and 2004) in which Italian price levels grew more rapidly than indicated by the national accounts deflator was followed by an opposite relative dynamic, with Italian price levels growing more slowly than the deflator. This divergence is even more pronounced when considering the evolution of the PWT price level.

Compared to France (an economy that, as mentioned, takes quality into account through the widespread use of hedonic prices), the evidence is even more pronounced: since 2005, Italy's relative price level has tended to slightly decrease (with no substantial differences between the Eurostat and PWT estimates), contrary to the constant increase highlighted by the GDP deflator.

Fig. 8 – GDP relative prices: Italy relative to Germany and France



Source: computations based on Istat, Eurostat and PWT data.

The implications for estimating Italian productivity of these differences between deflators and GDP price levels are significant. Figure 8 shows Italy's GDP level in PPP per hour worked relative to that of Germany and France in three estimates corresponding to different assessments of the numerator of

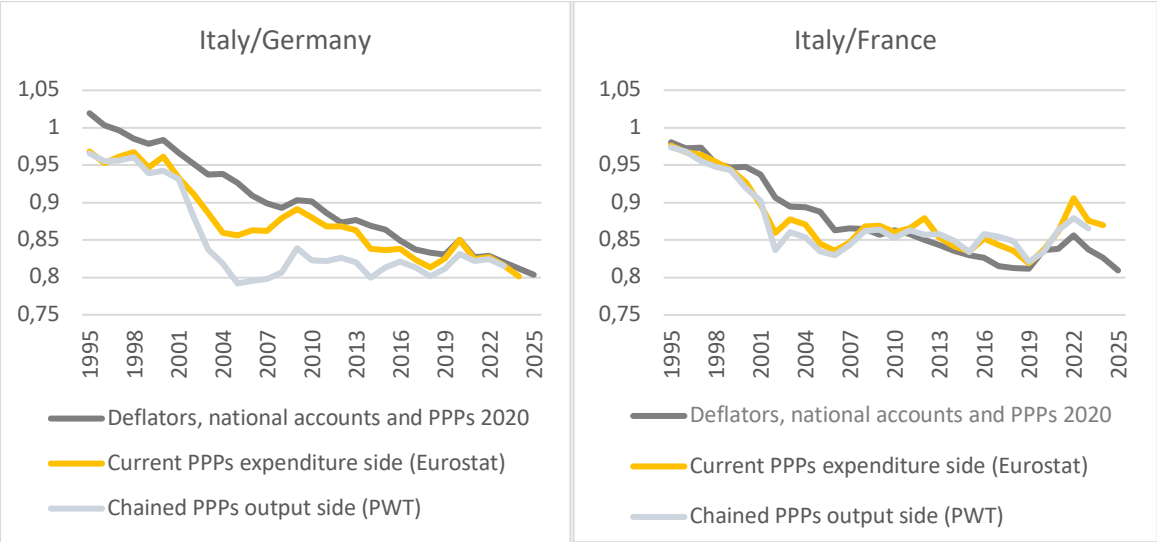
[11] The main difference between the two types of measurement is that while expenditure-side estimates (such as the Eurostat one) only take into account the prices of so-called domestic absorption (essentially goods and services absorbed by private and public consumption and investment), output-side estimates also take into account corrections for differences in export and import prices between countries. The latter deflate the corresponding export and import values in the national accounts, allowing for the output and input components (imports are treated as inputs in the production of the entire economy) needed to obtain, on the production side, GDP (and value added); for a description of this approach, see Feenstra et al. (2015).

hourly productivity. The first (grey line) describes Italy's relative productivity as derived from the national accounts, whereby real GDP (in chain linked volumes, index 2020=100) is obtained in the three countries by deflating nominal GDP with the deflators of their respective accounts. To allow for a comparison of levels, the economies' real GDP is expressed in PPPs of the base year of the national accounts, i.e., 2020 PPPs. In the second estimate (yellow line), the GDP at current prices of the countries examined is converted into current PPPs on the expenditure side from Eurostat. The GDP levels thus obtained are valued at uniform prices across the three economies, so the ratio between them leads to a comparison of volumes (common prices cancel out), unaffected by the differences in deflation methods that characterize the volumes of national accounts. However, current PPPs on the expenditure side are, as mentioned, useful for comparisons of living standards across economies. The comparisons obtained by dividing GDP in current PPPs per hour therefore measure the differences across countries in average standards of real expenditure per hour of work. This is not exactly a productivity concept that rather measures the output achievable with a unit of labor.

To more precisely assess international differences in productivity levels (and dynamics), it is therefore necessary to refer to a measure of value added expressed in PPPs on the production side, the latter obtained with PPPs for both output and input. This is made possible in the third estimate (blue line), in which the GDP of the three countries is converted into PPPs on the production side from PWT sources. The peculiarity of these PPPs, used for such comparisons, is that they are constant not only between countries (as is the case for expenditure-side PPPs), but also over time as they are the result of adaptations, through interpolations and concatenations, of the real growth of the national accounts to the various benchmark years for which detailed surveys of the price levels of goods and services are available.[12]

[12] Prices are collected in benchmark years by the International Comparison Program at the World Bank. The constraints imposed by these benchmark values (the latest are 2005, 2011, 2017, and 2021, with increased frequency in the latter period) on the interpolation of real growth data lead to real GDP dynamics that differ from those resulting from the national accounts. Thanks to these constraints, the procedure allows for quantities expressed at constant prices over time (as well as across countries), neutralizing the effects of heterogeneity in national accounts deflation methods.

Fig. 9 – Labor productivity: GDP per hour worked, Italy relative to Germany and France



Source: computations based on Istat, Eurostat and PWT data.

What does Figure 8 tell us? Compared to Germany, Italian hourly productivity, measured using national accounts deflators, has shown a nearly monotonic decline over the entire thirty-year period from 1995 to 2025. Productivity measures based on PPPs, however, differ from this representation. They depict a more pronounced Italian deterioration, compared to estimates based on deflators, in the early years of the euro (between 2000 and 2004-2005), which is followed by relatively better performance. In particular, the most appropriate measure for this comparison, namely the PWT estimate based on chained PPPs on the production side, highlights that the sharp decline in the initial period (more intense than the other estimates) is followed, starting in 2005, by an initial recovery and then, over the last fifteen years, a trend substantially in line with the German one. According to this measure, Italian and German hourly productivity have essentially proceeded at similar rates since 2010.

Even when compared with France, Italian hourly productivity measured with PPPs performs better than the estimate obtained with national accounts deflators. The latter has been steadily declining up until the beginning of the current decade, recovering only in the early 2020s. The measures obtained with PPPs from Eurostat and PWT provide a consistent signal, different from that derived from the deflator estimates. This is similar to the indication derived from the comparison with the German economy. The decline in Italy's hourly productivity compared to France materialized in the early years of the period under consideration. At the beginning of the single currency, between 1999 and 2002, the relative decline was even more pronounced than that measured with national accounts. After this phase of decline, however, Italy's GDP per hour worked began to evolve along the same path as French productivity, contrary to what the accounts of the two economies indicate.

Overall, therefore, there seems to be sufficient reason to question the national accounts' evidence of a long-term steadily declining labor productivity of the Italian economy compared to other major European countries. It is, in particular, the estimates based on output-side PPPs, which are most

appropriate for making international productivity comparisons, that raise the greatest questions. They point to a different story than that deduced from the national accounts. The performance of the Italian economy has not consistently deteriorated compared to its major partners, but according to these indicators, it has essentially shared the trend that has characterized other countries over the last twenty years. It is, therefore, the assessment of the (past) long-term trend of Italy's labor productivity that is affected by these measurements.

We have discussed labor productivity across the entire economy. However, the uncertainties of comparability also directly affect the assessments conducted in the previous sections. The deflationary problems addressed in this section cut across sectors, including those (net of public administration and real estate services) considered reliable for calculating value added. Furthermore, international comparisons of TFP are inevitably biased, as labor productivity is a component of multifactor productivity, alongside capital productivity. However, it is not possible to make estimates for private sector TFP similar to those for labor productivity, as sector-specific output PPPs are not available, nor are available the PPPs that would be needed to assess the net capital stock across countries. The message of this section, however, seems clear. Reasonable doubts can be raised as to whether the deterioration in Italian productivity has been as prolonged as the national accounts statistics suggest. A deflation effect is affecting comparisons. Net of this, it would appear that Italy has been following a common trend with its main European partners for a longer period of time.

5. Conclusions

The story of Italian productivity appears to be an underrated one. This is both in the sense of the inadequate consideration of the data that demonstrate a significant historical period of improvement, just behind us, and in the sense of a very deeply ingrained narrative of "low productivity" that prevents many analyses from properly assessing that phase of strengthening. The latter has been overlooked and dismissed, likely because it is impossible to explain in light of the structural anomalies of the economy that constitute the unique constituent elements of rigid interpretative frameworks. Yet, that improvement has occurred, and it should therefore be acknowledged that there is more to it than what has been captured by the prevailing interpretative frameworks. This paper has attempted to highlight its relevance.

In particular, we have shown how, after a long period of stagnation, private sector multifactor productivity (an indicator of technological progress) emerged stronger from the so-called second recession (during 2013) and began to grow in line with other major European economies, even more rapidly than these in the years surrounding the pandemic (until 2022), when Italy experienced a robust recovery. This appreciable acceleration came to light only following Istat's revision of the relevant statistics. In previous estimates, productivity had stagnated. However, the change in the data was not matched by an adjustment in many interpretations, which remained anchored to the story emerging from previous statistics.

In our interpretation, the improvement signaled by the new data was fundamentally driven by the reallocation of resources toward the most productive firms and, in the final phase, by the acceleration of the economic cycle with the strong growth in aggregate demand driven by expansionary economic policies. This is an experience Italy has not had for a long time, and therefore, the country's productivity has not been able to rely on it for a prolonged period. The lack of demand, i.e., the persistence of a depressed domestic market, has had a dampening effect on the economy's efficiency through various channels, attenuating the positive effects of reallocation, delaying those of reorganizations in services, curbing technological investments, and constraining the ability to add value of incumbent firms, even the most productive ones.

The ingredients of the productivity recovery were the strengthening of firms' balance sheets, their transition to larger size classes, and the recovery in investment. The improvement affected both manufacturing and services, the latter even more intensely after 2019. Italy's structural anomalies remain present, even if they appear to be decreasing (the average size of Italian firms has reached the declining size of France, participation in digitalization among small firms has gradually increased, according to Eurostat surveys, and the recovery in investment has also included those in intangible assets). The fact is that their impact was outweighed in the period examined by the positive effects of reallocation and, subsequently, by the impulses deriving from the stronger economic cycle. The deterioration in productivity in recent years (2023-25) interrupted that positive phase, presumably reflecting the consequences of the energy shock on production factor prices, as well as the potential detrimental impact on productivity of some important income tax measures (flat tax for the self-employed and tax wedge reduction for employees).

We also highlighted the significant uncertainties that, in any case, surround international productivity comparisons. These arise from the different methods of deflation of GDP and value added (i.e., the numerator of productivity indicators) used by the statistical offices of the various countries. It has been shown that by adopting GDP measures in purchasing power parity, Italy's labor productivity trends relative to those of its partners are quite different from those based on national accounts deflators. Specifically, with reference to the economy as a whole, GDP per hour worked expressed in PPPs on the production side appears to have begun to evolve, after an initial deterioration more pronounced than that indicated by national accounts, at rates similar to those of Germany and France starting in 2004-2005. According to this measure, Italy's alignment with the labor productivity dynamics of the major European countries therefore dates back approximately twenty years. This is a very different indication from that coming from the national accounts and should raise rather radical questions for those who use the statistics, as well as, of course, those who produce them.

It should go without saying, but it is worth being explicit. The evidence discussed here clearly does not indicate that Italy is a productivity rocket, a European leader in technological progress, or at the forefront of innovation. In this sense, one would not want to go from one caricature to another. Italy is an economy with several structural issues (recently mitigated, but not eliminated) and which for a long

time suffered the consequences of efficiency deficits and delayed adjustment to the economic and institutional shocks that have affected it (starting with the single currency). After a period of decline, however, it has realigned itself, thanks to the reallocation of resources and the strengthening of demand, with the dynamics of the major European countries, sharing with them a good portion of the problems and difficult challenges of the current situation. Recognizing that Italian productivity has indeed improved for a significant period should be the basis for considering what to do in the new phase, starting with examining the reasons for that acceleration and whether they can be replicated.

Bibliography

Accetturo A., Baltrunaite A., Ciani E., Cingano F., Daniele F., De Luca R., Di Marzio I., Greco R., Linarello A., Manaresi F., Mocetti S. (2025), "Le recenti dinamiche della produttività e le trasfromazioni del sistema produttivo, Banca d'Italia Questioni di economia e finanza (Occasional Papers), Luglio, n. 953.

Arrighetti A., De Nardis S., Traù F. (2024), "Il falso mito della manifattura inefficiente", Leap working papers, n. 11 July.

Banca d'Italia (2024), Relazione annuale sul 2023, maggio.

Banca d'Italia (2025), Relazione annuale sul 2024, maggio.

Banca d'Italia (2025), Considerazioni finali del Governatore, maggio.

Boscolo S., Pollastri C., Toffoli L. (2026), "La dinamica retributiva e il ruolo dell'imposta sul reddito delle persone fisiche", Upb, Nota di lavoro, prossima pubblicazione.

Bugamelli M., Linarello A., Lotti F. (2020), "Productivity dynamics over the last decade: Evidence from the universe of Italian firms", *Economia Italiana*, n. 2, 49-72.

Cipolletta I., De Nardis S. (2025a), "Si può parlare di declino italiano?", *Rivista Il Mulino*, anno LXXIV (02), 10-32.

Cipolletta I., De Nardis S. (2025b), "Meglio di come sembrava: l'economia italiana dopo la revisione dei conti economici", Menabò, 16 luglio, n. 241.

Colonna F., Scoccianti F., Viviano E. (2025), "The slowdown in productivity in the euro area and the role of input prices", Banca d'Italia Questioni di economia e finanza (Occasional Papers), April, n. 918.

Comitato Nazionale per la Produttività-Cnel (2025), *Rapporto annuale sulla produttività 2025*, Cnel, XI Consiliatura 2023-2028.

Feenstra R. C., Inklaar R., Timmer M. P. (2015), "The Next Generation of the World Penn Table", *American Economic Review*, 105(10), 3150-3182.

Galli G., Tucci F. (2020), "la caduta del valore aggiunto nella PA: evidenze e questioni aperte", Osservatorio sui Conti Pubblici Italiani, novembre.

Giraud C. J., Quevat B. (2017), "Pourquoi la croissance de l'Italie a-t-elle décroché depuis 2000 comparée a la France?" Insee, Note de conjuncture, June.

Istat (2025), "Misure di produttività. Anni 1995-2024", statistiche Report, 12 dicembre.

Romano L., Traù F. (2020), "Italian Industry and Productivity. Going Beyond the Mainstream View", *L'industria – Review of Industrial Economics and Policy*, 41 (4): 655-673.

Torrini R. (2016), "Labour, Profit and Housing Rent Shares in Italian Gdp: Long-run Trends and Recent Patterns", *Politica Economica,* n. 1.