

A measure of efficiency in the use of labour resources: beyond productivity

By Olivier Garnier and Thomas Zuber

France holds two opposite records in the post-Covid era: the largest drop in hourly labour productivity and the strongest rise in the total number of hours worked. These factors offset each other when, for the economy as a whole, we use a measure of productive efficiency adjusted for the employment rate of all labour resources, whether employed or not.

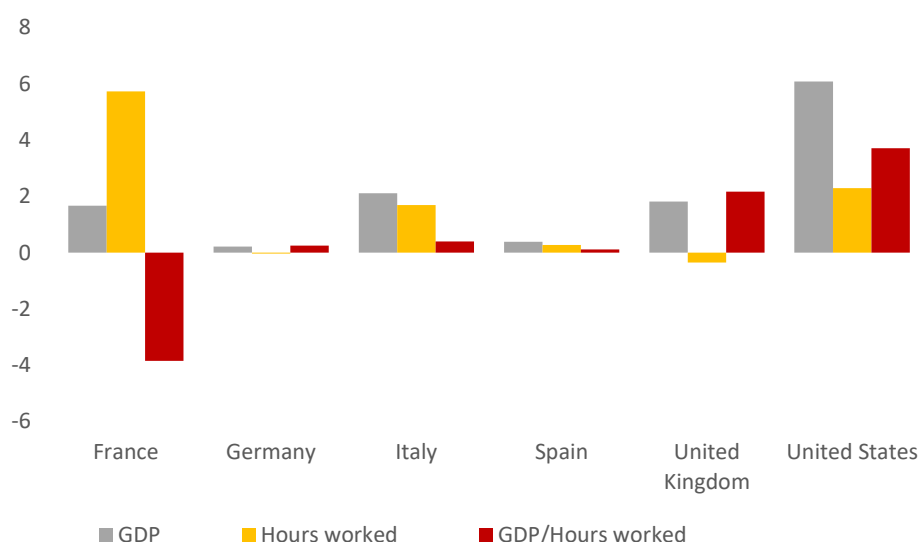


Chart 1: Changes in GDP, hours worked and hourly labour productivity since 2019 (in %, cumulative changes between Q4 2019 and Q2 2023)

Source: INSEE, Eurostat, ISTAT, ONS, BEA, OECD; authors' calculations

Note: GDP in volume and hours worked (national accounts concept).

Since the end of 2019, French GDP has grown at an average rate comparable to that of Italy and the United Kingdom and at a much faster rate than that of Germany and Spain. Yet, only France has seen its hourly productivity decline over the period (Chart 1). In the second quarter of 2023, labour productivity caught up with its pre-Covid level in the three other major euro area countries – and even exceeded it in the United Kingdom and the United States –, but was still 3.8% below its end-2019 level in France.

How can this French peculiarity be explained? To what extent should we be alarmed by or, on the contrary, welcome the significant increase in the employment intensity of French growth?

The drop in French productivity since the end of 2019 is all the more surprising given that it had been growing at a pace that was admittedly moderate but comparable to that of other European countries over the previous ten years. Several factors, either temporary (such as the retention of labour in certain sectors) or more lasting (increased recourse to apprenticeships, workforce composition effects, etc.), may have contributed to this decline. This post does not aim to draw up a detailed list of these factors or to put a figure on their contributions. Rather, it aims to examine the extent to which France's equally singular employment performance in recent years should lead us to put this productivity loss into perspective.

The sharp rise in the employment rate has contributed to the fall in productivity in France

In mid-2023, the total number of hours worked (i.e. employment multiplied by the average effective working time per employee) in France was 5.7% above its end-2019 level, compared with just 2.3% in the United States and 1.7% in Italy, with Germany, Spain and the United Kingdom barely back to their 2019 levels. This increase in France is attributable to employment rather than to average effective working hours, which have actually dropped very slightly. It is in France that the employment rate (the ratio of total employment to the population aged 15-64) has increased the most over this period (see [Sicsic et al. 2022](#)). In the second quarter of 2023, it stood at 68.5%, its highest level on record. However, it is still much lower than that in Germany (77.5%), the United Kingdom (75.7%) and the United States (77.5%). Despite a recent positive trend, the relatively low employment rates of young people (aged 15-24) and older people (aged 55-64) largely account for France's gap.

A rapid rise in the employment rate generally leads to a fall in the measure of hourly labour productivity. The population that was previously outside the labour force or unemployed has access to less productive jobs than the average, due in particular to their qualifications or the sector to which they belong. This composition effect is well documented. [Bourlès et al \(2012\)](#) estimate, for example, that a 1 percentage point rise in the employment rate results in a 0.5% fall in measured hourly productivity. [Guadalupe et al \(2022\)](#) use this result to explain the dynamics of the productivity gap between France and Germany.

However, it is important not to make the wrong assessment when a fall in productivity results from an increase in the employment rate. By construction, apparent labour productivity does not take into account the fact that individuals who are not in employment have untapped productive potential. When they obtain a job, even one that is not very productive, the economy's labour resources are used more efficiently, provided of course that the productivity of existing jobs does not fall in return (which would be the case if this were a pure work-sharing measure, via a generalised reduction in working hours, for example).

From this point of view, productive efficiency should not be considered in the same way depending on whether we are looking at a particular company or even the entire productive sector, or at the national economy as a whole. In the first case, a company's efficiency must be measured in terms of the workforce it employs (adjusted for effective working hours if we are considering hourly productivity), according to the usual definition of labour productivity. In the second case, a measure of efficiency at the level of the national economy must also take account of unused labour resources: an economy in which only the most highly qualified

individuals were employed (the mass of others being outside the labour force or unemployed) would be falsely more “productive” than others, and above all would have efficiency losses by leaving potentially productive resources unused.

A broader measure of the economy's efficiency in using labour resources, whether employed or not

To take account of this phenomenon, this post proposes broadening the usual measure of apparent labour productivity by relating GDP to the entire working-age population, rather than just to the population employed or total hours worked. These two measures are nonetheless linked, as GDP (Y) over working-age population (P) can be broken down as the product of hourly productivity (Y/H, where H is the total number of hours actually worked), hours worked per job (H/L, where L is total employment) and the employment rate (L/P).

By combining these different dimensions, this measure provides a more complete and less one-sided picture of changes in the productive efficiency of a given economy. In particular, a fall in hourly productivity (Y/H) will not necessarily lead to a fall in the broader measure of productive efficiency (Y/P) if it is offset by a rise in the average effective working time (H/L) and/or the employment rate (L/P).

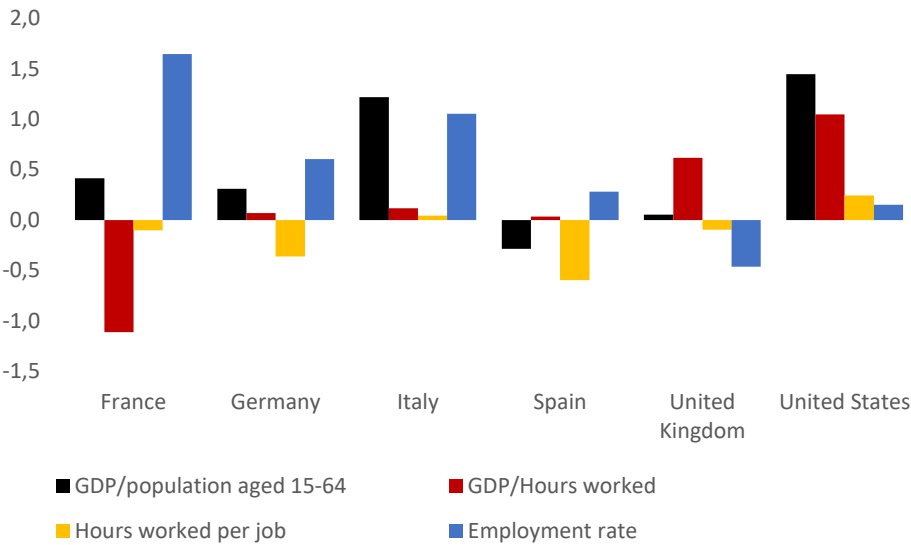


Chart 2: Changes in the efficiency of labour resources and its components since 2019 (in %, average annual changes between Q4 2019 and Q2 2023)

Source: INSEE, Eurostat, ISTAT, ONS, BEA, OECD; authors' calculations

By taking into account the overall changes in each country's potential labour resources, this measure allows for richer international comparisons. The results of this breakdown are shown in Chart 2.

This measure nuances the French peculiarity in the post-Covid era in terms of productivity

On the basis of this broader measure of productive efficiency, the French peculiarity in the post-Covid era disappears. While between end-2019 and mid-2023 French hourly productivity fell at a rate of 1.1% per year, output per person of working age rose by 0.4% per year, with the rise in the employment rate more than offsetting the fall in hourly productivity. This slight gain in France is comparable to that in Germany, while output per person of working age remained almost unchanged in the United Kingdom and posted an annual fall of 0.3% in Spain. Only Italy (+1.2% per year) and the United States (close to +1.5%) fared better.

The determinants of these efficiency gains or losses differ from country to country. In the United States, gains are mainly driven by hourly productivity, although employment and hours worked also contribute positively. In France and Italy, efficiency gains are directly linked to the sharp rise in their respective employment rates (driven by the rise in employment in France and the fall in the working-age population in Italy). Although this is a fairly general phenomenon across Europe in the post-Covid period (cf. [Arce & alii, ECB Blog June 2023](#)), Germany and Spain have been penalised more by the significant falls in average working hours per job, to which the rise in sick leave has contributed. Finally, the situation in the United Kingdom is the opposite of that in France, with gains in hourly labour productivity largely offset by the fall in the employment rate.

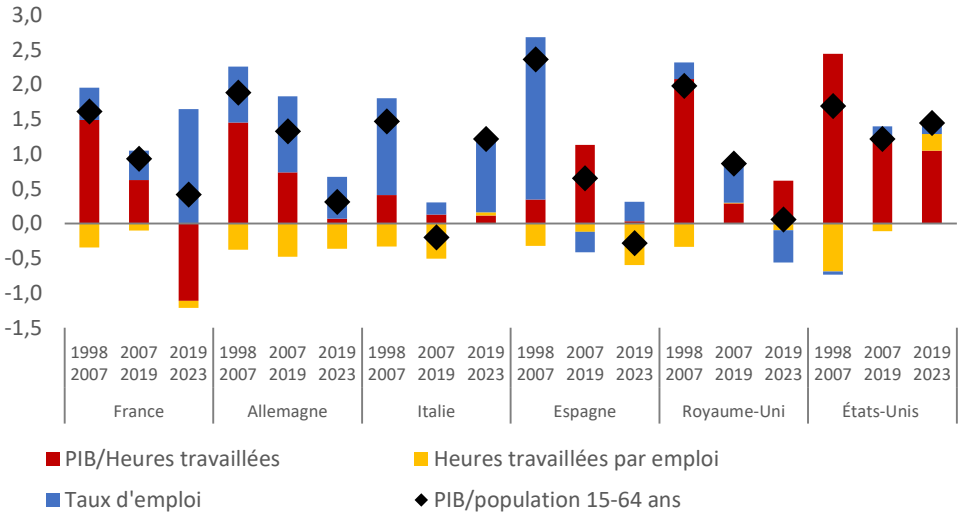


Chart 3: Changes in the efficiency of labour resources and its components over the long term (in %, average annual changes per period)

Source: INSEE, Eurostat, ISTAT, ONS, BEA, OECD; authors' calculations.

Note: the year 2023 is stopped at Q2.

This analysis shows that what makes France rather unique in the post-Covid period is that it has corrected the pre-existing imbalance between a relatively high level of labour productivity and a below average employment rate compared to other advanced economies. This rebalancing represents a fairly clear break with the pre-Covid period, as Chart 3 shows. Over

the long term, growth in output per person of working age in France has been fuelled by growth in hourly productivity rather than by growth in the employment rate. In this respect, France differs not only from the United States, where the increase in output per person of working age has been driven almost entirely by gains in hourly productivity, but also from Germany, which has been more successful in combining a strong rise in the employment rate with sustained growth in hourly productivity. Over the period 1998-2019, Italy stands out by displaying a virtual stagnation of its hourly productivity and its working-age population, which was accompanied by an increase in the employment rate only during the first half of this period.

More generally, Chart 3 shows a slowdown in efficiency in the use of labour resources since the end of the 1990s, with the notable exception of the United States. This trend in output per person of working age follows fairly closely that in hourly productivity, and is therefore not attributable to employment growth alone. Faced with the expected deterioration in their demographic prospects, advanced economies will have to combine gains in labour productivity with an increase in the employment rate over this decade and the next.

In the more specific case of France, Chart 4 shows that the gap with Germany and especially the United States is not so much in terms of hourly labour productivity, but first and foremost in terms of output in relation to the population of working age. This shows that France still has some way to go in terms of employment rates.

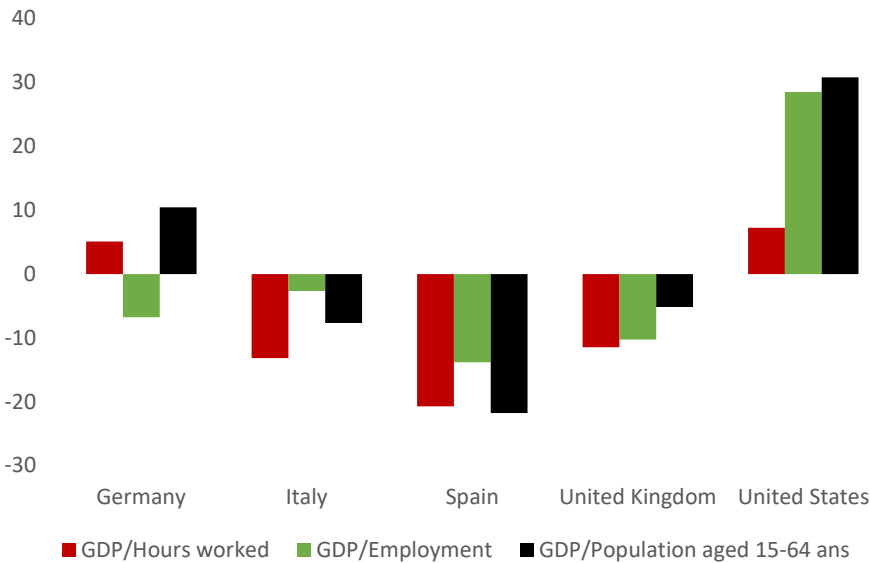


Chart 4: Comparison of productivity levels according to various measures in 2022, deviation from the French level (in %)

Source: Insee, Eurostat, Istat, ONS, BEA, OECD; authors' calculations

Note: GDP expressed in dollars and purchasing power parity.