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Consequences of deindustrialization in Europe


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Abstract

This paper examines the role that structural differences within the EU can play in aggregate inflation. To do so, we scrutinize changes in structural productivity differences and the relationships between productivity growth and wage growth. We then assess how these differences manifest in aggregate inflation and how they affect overall economic growth. We find that the direct Balassa-Samuelson effect remains effective, although its contribution is not very large for the EU as a whole. This is partly explained by the fact that productivity differences between the tradable and non-tradable sectors have decreased, because productivity growth in the tradable sector has slowed down. We also find that overall profitability has decreased.

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The Balassa–Samuelson effect

The Balassa-Samuelson effect (often referred to as a theory of inflation in catching-up economies) posits that countries with faster productivity growth in tradable sectors (e.g., manufacturing, exports) relative to non-tradable sectors (e.g., services such as retail or education) will experience higher overall inflation or real exchange rate appreciation (Balassa 1964). This occurs because productivity gains in tradables drive up wages across the economy (due to labor mobility), but non-tradables cannot offset this through efficiency improvements, leading to price increases in that sector. The effect is particularly relevant in developing or transitioning economies converging toward richer ones, as it creates structural inflation differentials without implying economic overheating (implicit in the Phillips curve).

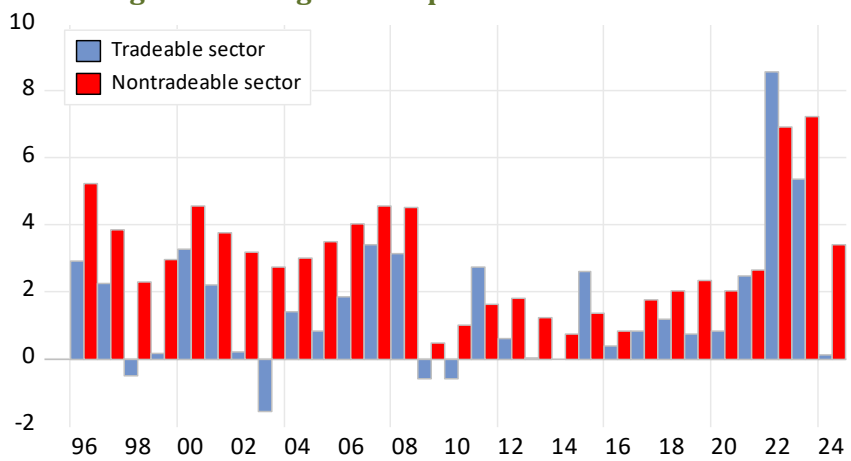
Although the Balassa-Samuelson hypothesis is well known, European economists typically overlook it in their everyday work—even though irrevocably fixed exchange rates are a fundamental feature of the European Monetary Union. In a fixed exchange rate regime, this is not an innocent oversight, because if a country (similarly to a firm) prices itself out of the market in real exchange rate terms, it will certainly affect future price and inflation developments. This point is crucially important in a Euro area–type fixed exchange rate system, where cross-border trade is becoming increasingly important. If prices were perfectly flexible and there were no obstacles to trade, we would expect price levels to converge to the average value.

In the EU context, empirical evidence suggests that the Balassa-Samuelson effect explains only a limited portion of observed inflation differentials, typically 0.2–2 percentage points annually relative to the euro area average. For instance, in Central and Eastern European (CEE) countries, it accounts for about 1 percentage point of total domestic inflation over periods such as 1995–2010. Even though convergence issues in the EMU context are undoubtedly important, there have been relatively few analyses that focus on them from a macro perspective and across a larger set of countries. Égert (2010), Garcia-Hiernaux et al. (2023), Črt and Masten (2020), Gern et al. (2022), and Sagi (2025) represent notable recent exceptions. The results are by and large similar and point to a relatively small effect at the aggregate European level.

Empirical analysis

Here we begin with a brief examination of the main differences between the tradable and non-tradable sectors to gain a better understanding of the root causes of the Balassa-Samuelson effect. These sectors can be classified in numerous ways, but we adopt the simplest definition here: industry versus the rest of the economy. In qualitative terms, no marked differences emerged when we used alternative definitions by reclassifying some service sectors as tradables, even though it is clear that more sophisticated sectoral classifications would be useful for policy purposes. To illustrate the basic issue, we start with the inflation rates presented in Figure 1 for the value-added deflators of these two sectors.

Figure 1. Change rate of prices in the two sectors



Note: All displayed values are unweighted averages of 20 EA countries growth rates

Figure 2. Development of productivity and wage differences

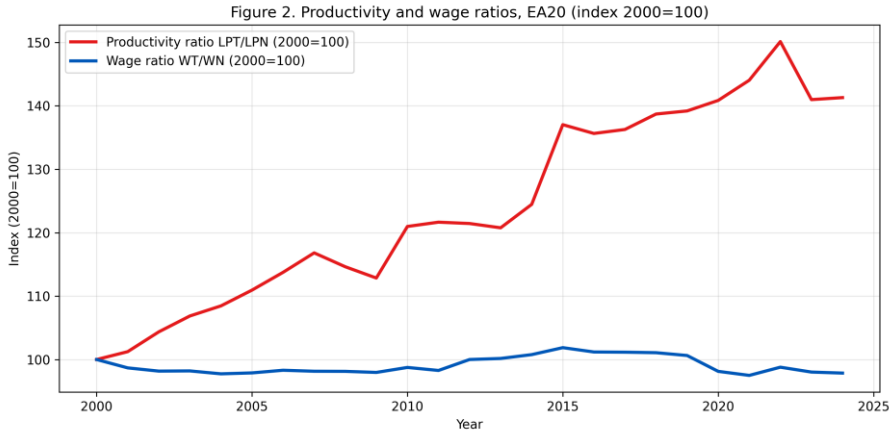
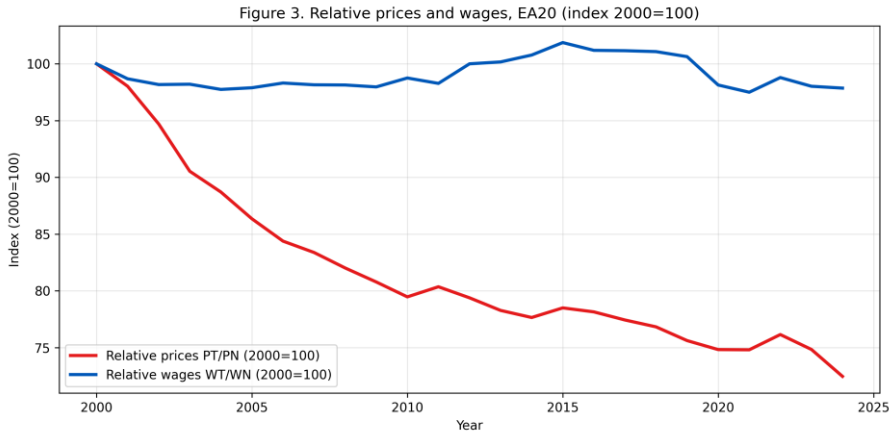


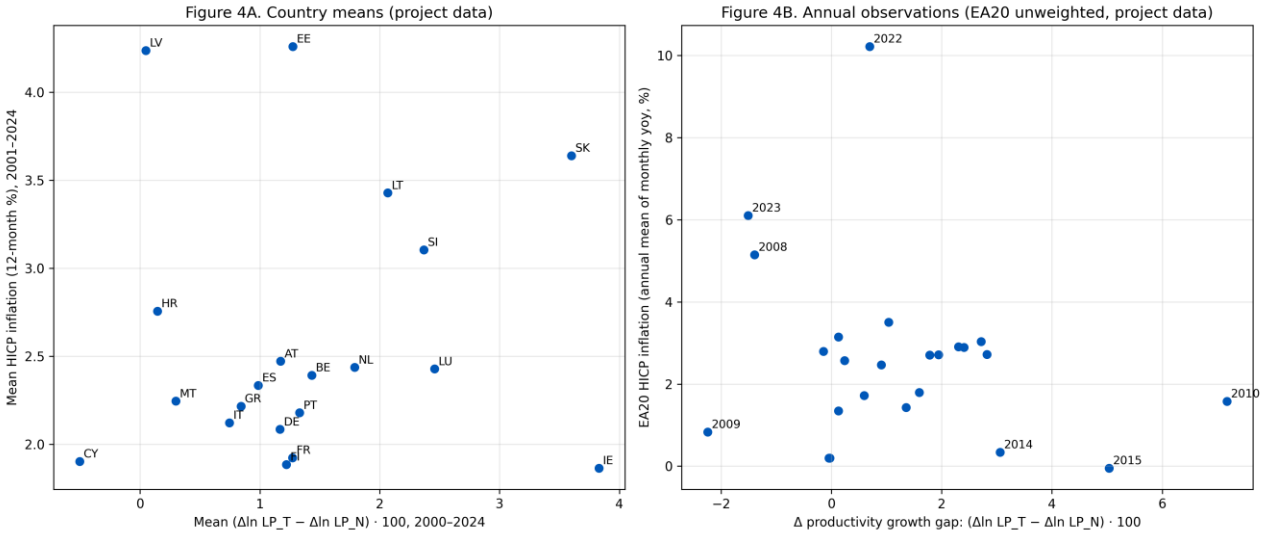
Figure 3. Development of price and wage differences



For the 2000–2024 sample period, the (unweighted) average annual growth rate of prices in the tradable sector is 1.55 percent, while in the non-tradable sector it is almost twice as high at 2.96 percent. It is therefore clear that sectoral weights and underlying cost developments will affect average inflation. We tested the basic form of the Balassa-Samuelson hypothesis using the full panel data for 20 countries and an estimating equation in which the key right-hand-side variables were the difference in labor productivity growth between the sectors and the overall rate of wage growth. The results indicate that differences in productivity developments do indeed push up nationwide price levels. This occurs because wage costs in the non-tradable sector that are not compensated by productivity growth translate into price increases at the aggregate economy level. Moreover, if the non-tradable sector's share increases, its contribution to overall inflation also rises.

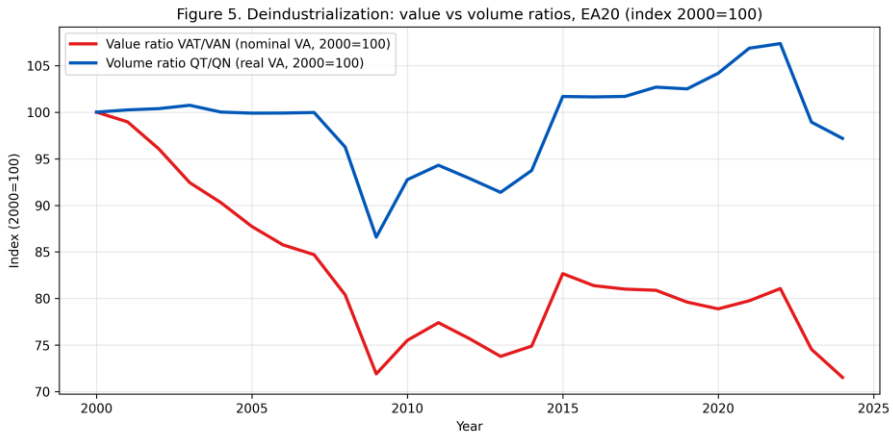
In the empirical analysis, however, we encounter problems because several shocks adversely affect economic relationships and country differences are still very large. As can be seen from Figure 4, the financial crisis years (2008–2010) as well as the post-Covid high-inflation years (2022–2023, coinciding with the start of the Ukraine war) represent clear outliers, which is already evident from the inflation numbers in Figure 1. One way to mitigate their influence is to use cross-sectional data on the means of inflation and productivity growth differentials between the two sectors (while also controlling for wage growth rates). The outcome of this analysis shows that, of the overall HICP average value of 2.56 percent, 0.20 percent was contributed by the productivity differential variable (the results were highly precise, with an R^2 of 0.91).Using the value-added deflator instead of the HICP yields practically the same result.

Figure 4. Country average values of inflation and differences in productivity growth



The relatively small estimated total effect of the Balassa-Samuelson mechanism does not mean that sectoral differences in development are unimportant. In fact, they matter a great deal. As shown in Figure 5, the growing share of the non-tradable sector slows down the overall growth rate of the economy, even though volume growth rates are roughly similar. By contrast, value shares behave completely differently: the share of the tradable sector declines in a trend-like manner. Because prices in the non-tradable sector partially feed through to wages in the tradable sector, the tradable sector indirectly bears the burden of the expanding non-tradable sector. The only remedies would be—apart from higher productivity growth in the non-tradable sector—a new order in the labor market such that wage increases better correspond to productivity growth, rather than being equal across sectors or even exceeding productivity growth in the non-tradable sector (so that wage growth there outpaces that in the tradable sector).The story does not end here. Adverse wage developments that do not respond to productivity growth also affect overall profitability (the profit share), which has likewise slowed down in a trend-like manner (not shown here).

Figure 5. The shrinking size of the tradeable (industry) sector



Concluding remarks

This paper has shown that sectoral differences in productivity growth between the tradable and non-tradable sectors remain significant. They inevitably affect price developments and - because of the euro (and its irrevocably fixed exchange rates) - competitiveness among euro area countries. This calls for new thinking on wage policies that would better reflect productivity developments. A related policy issue is the growth of the public sector, which has been a major contributor to the expansion of the non-tradable sector. If its growth could be better curtailed, that could also have positive spillover effects on price developments and competitiveness in Europe.

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