Tradability and Goods' Prices: A Tale of Two Regions

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Abstract:

We provide new evidence on manufacturing price inflation and the allocation of productivity gains by comparing US and EU industries from 1992 to 2017. Two patterns emerge. In tradable industries, where global competition is strong, prices have moved in lockstep across the Atlantic. In non-tradable industries, relatively sheltered from foreign competition, prices in the US have risen about four times faster than in Europe despite similar wages and industry compositions. The inflation differential is unrelated to compositional shifts, and evident in narrowly defined product categories where unobserved quality differences are unlikely to matter. A decomposition attributes most of the differential to rising market power in US non-tradable manufacturing industries, a pattern absent in tradable ones. Using variation in import penetration, we find that greater trade exposure lowers prices and profit shares, while competition policy remains crucial in non tradable industries.

JEL: E24, E25, E31, F62, L16, L60.

Keywords: Price, Manufacturing, Nontradable, Labor share, Markup.

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1 Introduction

Between 1992 and 2017, producer prices in US non-tradable manufacturing goods rose by about 60%, compared to only 10% in comparable European industries. Over the same period, tradable manufacturing prices followed nearly identical trends across the two regions. This pattern, shown in Figure 1 using harmonized US–EU industry data, is the empirical puzzle at the center of this paper. It is not an artifact of aggregation or quality adjustment: across 97 matched homogeneous nontradable products, including ready-mix concrete, frozen vegetables, and shipping containers, where scope for quality change is minimal, prices in the US rose roughly twice as fast as in Europe.

The first explanation that comes to mind when presented with this fact is of course the Balassa-Samuelson effect. If the US experiences faster tradable productivity growth than Europe, the stronger labor demand would bid up wages economy-wide, raising marginal costs and thus prices in all sectors where productivity growth lags in relative terms.

Yet the data do not support this interpretation. As we show below, wage growth in US and EU manufacturing has been strikingly similar, both in tradable and non-tradable industries. The wage channel through which Balassa-Samuelson should operate does not appear to be active.

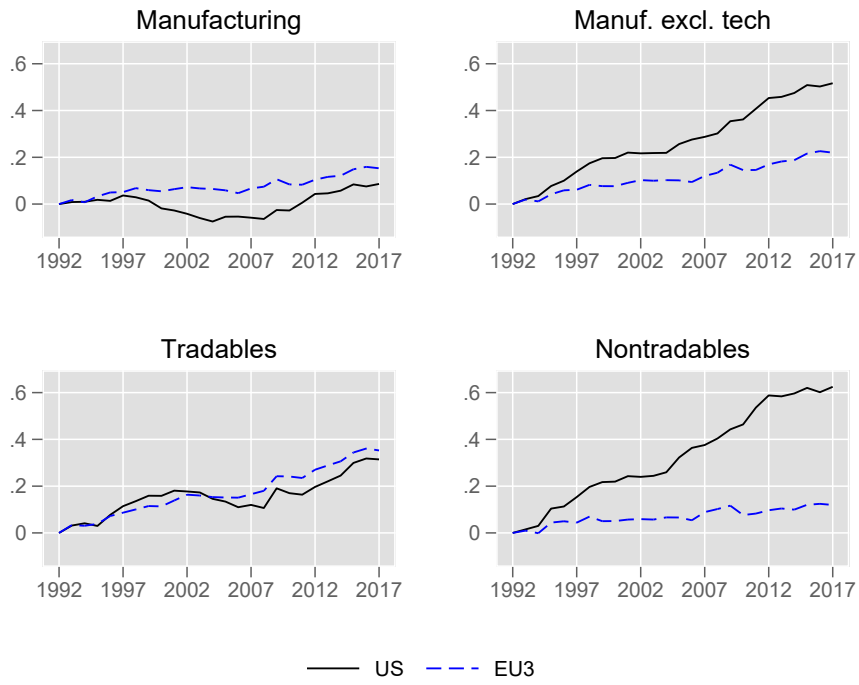
Moreover, the apparent US productivity advantage in the tradable sector is almost entirely driven by a single industry: computers, electronics, and related technology goods, where measured prices decline dramatically because of large hedonic quality adjustments. These generate very large theoretical productivity gains. Excluding this sector, US tradable productivity grew only slightly faster than in Europe, while US non tradable productivity grew somewhat *more slowly*.

If not differential productivity growth, what explains the sharp divergence in non-tradable prices? Using a decomposition that links value-added prices to wages, productivity, cost shares, and markups net of returns to scale (μ/γ), we show that the US–EU inflation differential in non tradable prices is accounted for by two forces: modestly slower US productivity growth and, more importantly, a sustained increase in μ/γ, the component that captures firms' ability to set prices above costs, beyond what can be attributed to economies of scale. In tradable industries, where global competition disciplines pricing, μ/γ evolves almost identically in the US and Europe. The divergence is concentrated precisely where foreign rivals are absent.

This paper develops and applies this framework in four steps. We first present a transparent accounting decomposition that extends the standard unit labor cost framework to incorporate changes in factor cost shares and markups net of returns to scale, enabling us to separate technology-driven from market-power-driven price changes within a single identity. Second, we apply the decomposition to harmonized US–EU data, showing that the sharp nontradable price divergence reflects rising μ/γ in the US, a pattern absent in tradables, where both regions exhibit parallel trends in costs, productivity, and markups. Third, we embed the decomposition in a CES production model to connect the accounting to economic primitives, recovering technology and market-power parameters in a unified structural framework. Fourth, we provide causal US evi-

Figure 1: The Divergence in US vs. EU Manufacturing Goods Producer Prices

GVA deflators, 1992–2017, 1992=0



Source: authors' calculations using OECD STAN. EU3 = France, Germany, Italy. See Table A.1 in Appendix for industry definitions.

dence that trade exposure disciplines pricing: using variation in import penetration instrumented with PNTR-related tariff changes following China's WTO accession, we show that greater trade exposure reduces prices and profit shares.

The cross-country comparison is central to our identification strategy. By using the EU as a counterfactual for the US, we compare how similar manufacturing industries evolve under different institutional environments, particularly with respect to competition and trade policy. The tradable–nontradable distinction sharpens the comparison further: tradable industries face global competition and often share production technologies across borders (Covarrubias et al., 2019, Amiti and Heise, 2024), while nontradables are shaped more by domestic market structure and regulation (Besley et al., 2021). The fact that tradable sectors track each other closely across the Atlantic, while nontradable sectors diverge sharply, points to domestic market power, not technology or wages, as the key driver.

Our results also speak to a broader puzzle in the market power literature. Several studies have documented rising firm-level markups in the US but found little connection between markups and prices (Ganapati, 2021, Conlon et al., 2023). We show that this disconnect arises because gross markups do not control for simultaneous changes in technology and scale. The relevant object is

μ/γ, markups net of returns to scale, which we link directly to prices through our decomposition. Measured this way, rising market power maps clearly into higher nontradable prices, reconciling the firm-level evidence with aggregate price dynamics.

Related Literature. This paper contributes to a growing literature on the relationship between market structure, trade exposure, and pricing dynamics, particularly in the context of rising concentration and markups in advanced economies.

A first strand examines the disconnect between rising markups and stable or falling prices. This literature is often motivated by Syverson (2019), which presents a simple decomposition of prices. Ganapati (2021) finds that more concentrated industries often exhibit falling prices, rising productivity and falling labor shares. He interprets the latter as evidence of technological change rather than rising market power. Conlon et al. (2023) show that firm-level markup growth is not correlated with industry-level price increases, casting doubt on the idea that rising markups necessarily harm consumers. Relative to Ganapati (2021), we show that changes in labor shares depend on capital and profit shares, and may therefore be driven by either technology or market power. Relative to Conlon et al. (2023), we show that markups alone need not be related to prices: the relevant measure is markups net of returns to scale, controlling for technology, rather than gross markups relative to prices. Using this extended decomposition, we show that price growth in US goods is closely linked to rising profit shares, particularly in markets with limited trade exposure.

A second strand studies how international trade disciplines firm behavior. Covarrubias et al. (2019) show that foreign competition explains substantial increases in concentration. Amiti and Heise (2024) shows that import competition reduces markups and raises pass-through, particularly in manufacturing sectors exposed to foreign rivals. Besley et al. (2021) provides cross-country evidence that openness to trade correlates with stronger antitrust enforcement, especially in markets less exposed to global competition. These findings suggest that trade exposure plays a central role in shaping pricing behavior, especially in domestically oriented sectors. We build on this insight by showing that US–EU price divergence is concentrated in nontradable manufacturing, where US firms appear to exert growing market power.

A third strand studies factor shares and income distribution. Barkai (2020) documents a decline in both labor and capital shares in US industries, implying a rising profit share. We link these profit share dynamics directly to value-added price growth, using a structural decomposition that accounts for wages, productivity, and capital costs. Whereas Barkai focuses on income levels, our analysis emphasizes price changes—the key channel through which market power affects consumers—and compares their evolution across countries.

Finally, we relate to recent debates over international price divergence and the role of measurement error. Studies such as Byrne et al. (2016) and Atalay et al. (2025) highlight concerns about deflator quality, particularly in technology-intensive sectors. We address this by excluding such

sectors from our core analysis and focusing on comparably measured manufacturing industries, where price differences are more likely to reflect economic forces rather than statistical noise.

Taken together, this paper unifies these strands—on markup dynamics, trade and competition, and factor shares—through a single decomposition framework applied to harmonized US–EU data. By combining cross-country price evidence, a welfare-relevant measure of market power, and sector-level trade variation, we provide the first systematic explanation for why nontradable manufacturing prices have diverged between the US and Europe.

The remainder of the paper is organized as follows. Section 2 develops the price decomposition. Section 3 applies it to US–EU manufacturing. Section 4 connects the results to economic primitives in a CES model. Section 5 complements the cross-country evidence with causal US industry evidence. Section 6 concludes.

2 Decomposition Framework

To understand the forces behind the US–EU nontradables price divergence documented above, we begin by decomposing changes in nominal gross value-added prices, P, at the industry level as:

$$\Delta \log P = \underbrace{\Delta \log W - \Delta \log \frac{Y}{N}}_{\Delta \log \text{ULC}} - \underbrace{\Delta \log s^L}_{\text{Change in Labor Share}}, \tag{1}$$

where W denotes average nominal wages, $\frac{Y}{N}$ is real output per hour, and $s^L \equiv \frac{WN}{PY}$ is the labor share of value added. The first term captures changes in unit labor costs (ULC), while the second term reflects shifts in the distribution of value added away from labor.

From labor share to profit share to prices. The labor share can fall because of either a decrease in the labor cost share or an increase in the profit share:

$$\Delta \log s^L = \underbrace{\Delta \log c_L}_{\text{Labor Cost Share}} + \underbrace{\Delta \log(1 - s^\pi)}_{\text{1 - Profit Share}}.$$

The labor cost share may decline due to capital-biased technical change, automation, or declines in the relative price of capital if the elasticity of substitution is high (Karabarbounis and Neiman, 2014). The profit share, in turn, reflects changes in markups net of returns to scale. Following Syverson (2019):

$$\frac{\mu}{\gamma} = \frac{1}{1 - s^\pi},$$

where μ denotes the markup and γ the degree of returns to scale. Profit shares rise when markup growth exceeds the cost-reducing effects of increased scale. Combining these relationships yields:

$$\Delta \log P = \Delta \log W - \Delta \log \frac{Y}{N} - \Delta \log c_L + \Delta \log \frac{\mu}{\gamma}, \tag{2}$$

where $c_L \equiv \frac{WN}{WN+RK}$ is labor's share of total cost and $\frac{\mu}{\gamma}$ is the markup net of returns to scale.

Accounting Decomposition. Equation (2) shows that prices rise when: (i) unit labor costs increase (wages grow faster than productivity); (ii) labor's share of total costs decreases for a given ULC; (iii) profit shares rise, implying higher markups net of returns to scale. Equation (2) thus provides a transparent decomposition of changes in prices into unit labor costs, cost structure, and profits.[1]

Economic Decomposition: Technology and market power. Of course technology and market power are likely to operate simultaneously. Technological progress typically reduces unit labor costs by raising productivity, lowering prices. If capital-biased, it may also reduce the labor cost share and increase the capital share, raising prices relative to unit labor costs. When technological change enhances scale economies—as in models with fixed costs or intangible capital (Ganapati, 2021, Crouzet and Eberly, 2023)—prices may fall further unless markups rise commensurately. In some cases, the same innovation can drive both higher productivity and higher markups: Miller et al. (2025) shows that in the cement industry, technological change increased scale economies and markups; prices fell, but not enough to pass through the full productivity gains to consumers.

Relation to existing work. Our approach builds directly on and extends two strands of the literature. Relative to Ganapati (2021), we show that changes in producer prices depend not only on productivity and the labor share, but also on whether the decline in labor share reflects higher capital shares or higher profit shares—a distinction that allows us to identify technology- versus market-power–driven price changes. Relative to Conlon et al. (2023), who compare firm-level markups from De-Loecker et al. (2019) to narrow industry-level price indices and find little correlation, we focus on markups net of returns to scale, controlling for technology and capital intensity. This provides a more welfare-relevant link between profits and prices and clarifies why rising gross markups may not always translate into higher consumer prices.

[1] Our decomposition focuses on value-added prices and speaks directly to the factor shares in gross value added most referred to in the literature. In equation A.1 and Figure A.2 in Appendix, we extend the discussion and demonstrate that our main findings hold using a decomposition in gross output space.

3 Cross-Country Application: US–EU Manufacturing

We now apply the decomposition in Equation 2 to quantify the drivers of inflation in US and EU manufacturing, distinguishing between tradable and non-tradable industries. We begin with aggregate results and then examine patterns by broad national account industry.

3.1 Data and Sample

Data Sources. We compile industry accounts in a harmonized ISIC Rev. 4 classification for OECD countries from the OECD Structural Analysis Database (STAN). These data are sourced from National Accounts and include industry-level measures of average wages, prices, output, employment, and capital stock. Our baseline sample covers the US and the three largest euro area economies—France, Germany, and Italy ("EU3") — from 1992–2017, the period with continuous coverage. As a robustness check, we also use an unbalanced panel of up to 33 OECD economies (Appendix Figure A.4).

Data robustness. While the OECD STAN harmonization reduces cross-country comparability issues, several sources of measurement error remain. Most importantly, price indices may differ in their treatment of quality change (see Table A.2 in Appendix). For example, the US applies hedonic adjustments for high-technology goods and a production-cost approach for other products, which involves asking firms about the production cost of a given item, and quality adjusts the price of a good when its price changes as a result of a feature change that also changes the production cost. Some European countries, like Germany, use option-cost adjustments, valuing additional product features at their observable marginal cost. These methodological differences are most pronounced in technology-intensive sectors, which we exclude from our core analysis. In our robustness analyses, we restrict the comparison set to countries using similar price index construction methodologies.

Classification changes and historical revisions to national accounts can also introduce breaks in the series. STAN applies backward concordances to mitigate this, and our analysis uses broad industry aggregates to further reduce sensitivity to classification shifts.

Sample coverage. We focus on manufacturing for three reasons. First, manufacturing prices are more reliably measured than service-sector prices,[2] which is critical for cross-country comparisons. Second, although manufacturing represents only 10–20% of GDP, it plays a central role in macroeconomic trends, including the decline in the labor share (Gutiérrez and Piton, 2020) and the post-2000 productivity slowdown (Syverson, 2016). Third, it is important for cost-of-living

[2] See the OECD Methodological Guide for Developing Producer Price Indices for Services for a discussion.

and inflation dynamics, given its large weight in household consumption (e.g., food manufacturing accounts for roughly 30% of household spending) and its role as a supplier to downstream sectors.

Tradability classification. We classify manufacturing industries as tradable or nontradable based on their trade openness, measured by the ratio of exports plus imports to total production in the US (similarly to Piton, 2021). Industries above the manufacturing-wide average are classified as tradable; the rest are nontradable. In our data, tradables account for about 45% of gross value added and include textiles, machinery, and transport equipment. Nontradables include food, wood, paper, chemicals, pharmaceuticals, and basic metals. The industry coverage and categorization is listed in Table A.1.

Capital Costs. To recover capital's share in total production cost — a necessary input in the decomposition — we follow a standard user-cost approach (Hall and Jorgenson, 1967, Barkai, 2020). Specifically, capital cost for industry i, country c and year t is defined as the product of $K_{i,,t}$, the constant price capital stock from STAN, and $R_{i,c,t}$, its implicit rental rate given by:

$$R_{i,c,t} = p^K_{i,c,t-1}\left[r_{c,t} + \delta_{i,c,t}(1+\pi^K_{i,c,t}) - \pi^K_{i,c,t}\right] ,$$

with $r_{c,t}$ the opportunity cost of capital (long-term risk-free bond yields), $\delta_{i,c,t}$ the (country, industry and time-varying) depreciation rate[3] and $\pi^K_{i,c,t}$ expected capital gains (moving average of realized investment price growth). These inputs are sourced from national accounts and the OECD. In Appendix A, we test alternative calibrations—e.g., with no capital gains/losses and a fixed opportunity cost of capital, and find that price decomposition results remain highly robust to these changes.

3.2 Contribution of Technology

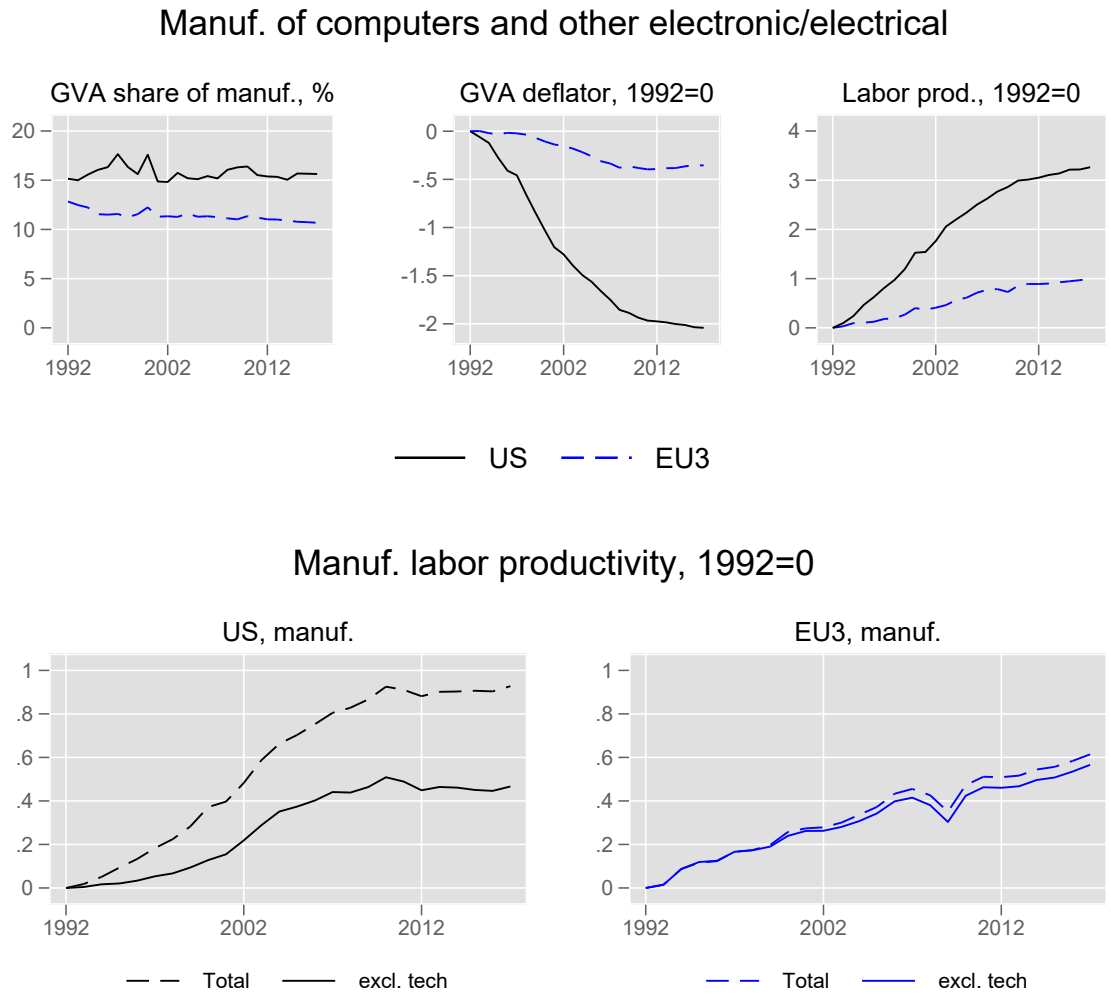
Technology-intensive manufacturing—computers, electronics, optical products, and electrical equipment—differs from the rest of manufacturing in three ways: rapid innovation, steep price declines, and extensive quality adjustments (Atalay et al., 2025). These features make it a major driver of measured productivity growth but also a challenge for cross-country price comparisons.

Figure 2 illustrates these dynamics.[4] The top panel shows that technology manufacturing's value-added share is larger in the US than in the EU but stable over time. Price trends, however,

[3]We recover "implicit" depreciation rates from capital stock and investment data for each country, industry and year assuming geometric depreciation.

[4]We use here historical data which means we lose some industry granularity and cannot identify precisely the role of computer manufacturing. We focus here on C26-C27 that corresponds to "computers, electronics, optical products, and electrical equipment". The results carry through if using data for C26 (Manufacture of computer, electronic and optical products) available since 2000 only. We also have data for the gross output deflator for ICT manufacturing in the US since 2000 –a subset of C26– and find that this sector is driving the fall in the C26 sector output deflator.

Figure 2: The Role of Technology Manufacturing in US–EU Price and Productivity Gaps



Notes: Technology manufacturing ("tech.") includes computers, electronics, optical products, and electrical equipment (ISIC Rev. 4 industries C26–C27). The figure shows the level of the share of tech. in total GVA and log changes of the GVA deflator and labor productivity. US prices fall much faster than EU prices, inflating the measured US productivity advantage. Source: authors' calculations using OECD STAN; EU3 = France, Germany, Italy.

diverge sharply: US technology prices fell by nearly 200% between 1992 and 2018, compared to only 40% in the EU. This differential drives a large transatlantic productivity gap: US technology labor productivity rose by a factor of 3, while in the EU it rose by a factor of 1. The bottom panel shows the aggregate implications. Including technology, US manufacturing productivity rose by about 90%; excluding it, growth was only 45%. In the EU, the difference is much smaller (60% vs. 50%), implying faster non-technology productivity growth than in the US.

The US lead in technology manufacturing is well documented (e.g., the Draghi Report, 2024) and reflects both real innovation and sectoral composition. But differences in price deflation methods—especially the US reliance on hedonic adjustments for high-tech goods—likely account for part of the transatlantic gap in measured prices and productivity.[5]

To focus on underlying cost dynamics and market structure, we exclude technology manufacturing from our core analysis. This avoids confounding our results with sector-specific innovation and measurement practices. While this choice removes one source of transatlantic price divergence, it sharpens the comparison for the rest of manufacturing, where methodological differences are smaller and price trends more likely reflect genuine economic forces.

3.3 Tradable vs. Nontradable Manufacturing (Excluding Technology)

We next apply the decomposition to non-technology manufacturing, splitting industries into tradable and nontradable sectors. Figure 3 shows the evolution of prices, wages, productivity, and labor shares in the US and EU3 from 1992–2017. The main analysis uses nominal value-added prices; Appendix A.2 reports analogous results for gross output prices.

Tradable manufacturing. In tradable industries, trends are strikingly similar across the US and EU3. Prices, wages, productivity, and cost shares move in parallel, consistent with common global technologies, intense cross-border competition, and similar quality adjustments in price measurement. Between 1992 and 2017, labor productivity increased by roughly 60% in both regions, while wages rose by about 80%, leading to a 20% rise in unit labor costs. The labor cost share fell by about 10% in the US and remained essentially flat in the EU, while markups net of returns to scale (μ/γ) increased by roughly 15% in both. These changes offset each other, leaving price growth at about 30% in both regions.

Nontradable manufacturing. In contrast, nontradable industries display a large and persistent divergence. US nontradable manufacturing prices rose by 62%, compared to only 12% in the EU. This gap reflects two main forces: US labor productivity grew about 20p.p. less than in the EU, and the labor share fell a little less than 30p.p. more. Breaking this down, the labor cost share fell by about 10% in the US but increased by about 5% in the EU, while μ/γ rose by 23% in the US versus 10% in the EU. Wage growth was similar in both regions, ruling it out as the primary driver.

The combination of weaker productivity growth, a sharper labor cost share decline, and faster growth in μ/γ in the US points to a rising profit share—rather than capital deepening alone—as

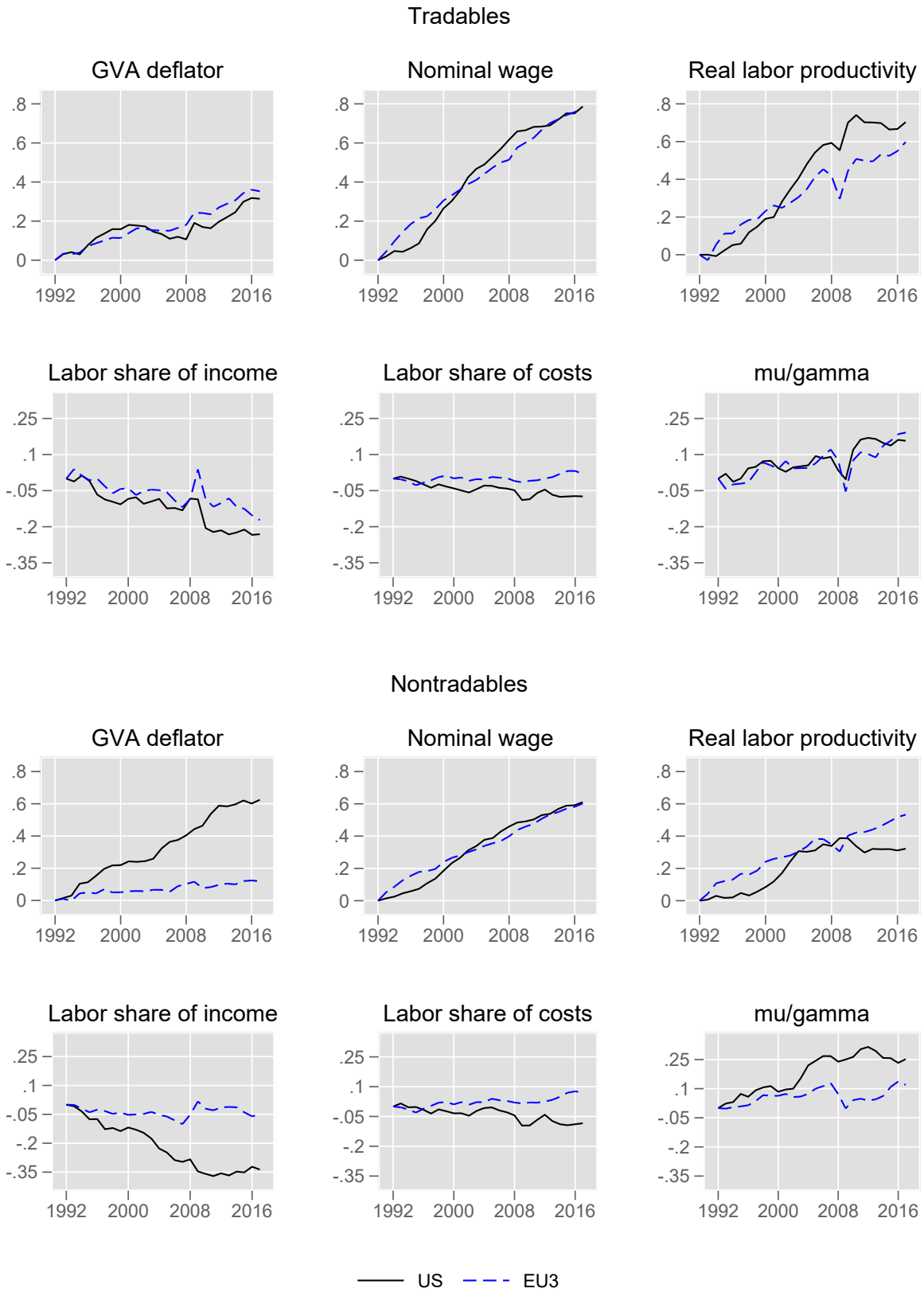
[5] See, e.g., Byrne and Corrado (2017) on how hedonic deflation and statistical practices can materially affect measured prices and productivity.

a key contributor to the price gap: if capital intensity had risen substantially, we would expect stronger, not weaker, measured productivity growth.

One alternative explanation is systematic under-measurement of quality in US nontradables—due, for example, to branding, customization, or advertising—that is not mirrored in the EU. Such mismeasurement would not only overstate price growth but also understate measured productivity, since higher-quality output would be partly unaccounted for in real terms. However, for this explanation to account for the observed gap, mismeasurement would need to be both large and heavily concentrated in US nontradable manufacturing—an asymmetry that seems unlikely given the effort to harmonize statistical methods across sectors and countries.

To increase comparability between US and EU3, we exclude ICT manufacturing from our analysis. Including ICT manufacturing, as we show in Figure 2, US tradable productivity increased significantly faster in the US than EU3 over our sample period, which leaves open the possibility that our finding of faster relative nontradable price growth in the US is due to the Balassa-Samuelson effect. Contrary to the Balassa-Samuelson prediction, however, real wage growth in US nontradable was *lower* than in the EU3 nontradable sector (see Figure A.3 in Appendix presenting the decomposition with nominal objects deflated by CPI).

Figure 3: Tradable and Nontradable Manufacturing, log deviation from 1992



Notes: EU3 = France, Germany, Italy. See Table A.1 in Appendix for industry definitions, and Section 3.1 for a description of variables. Source: authors' calculations using OECD STAN.

3.4 National Account Industries

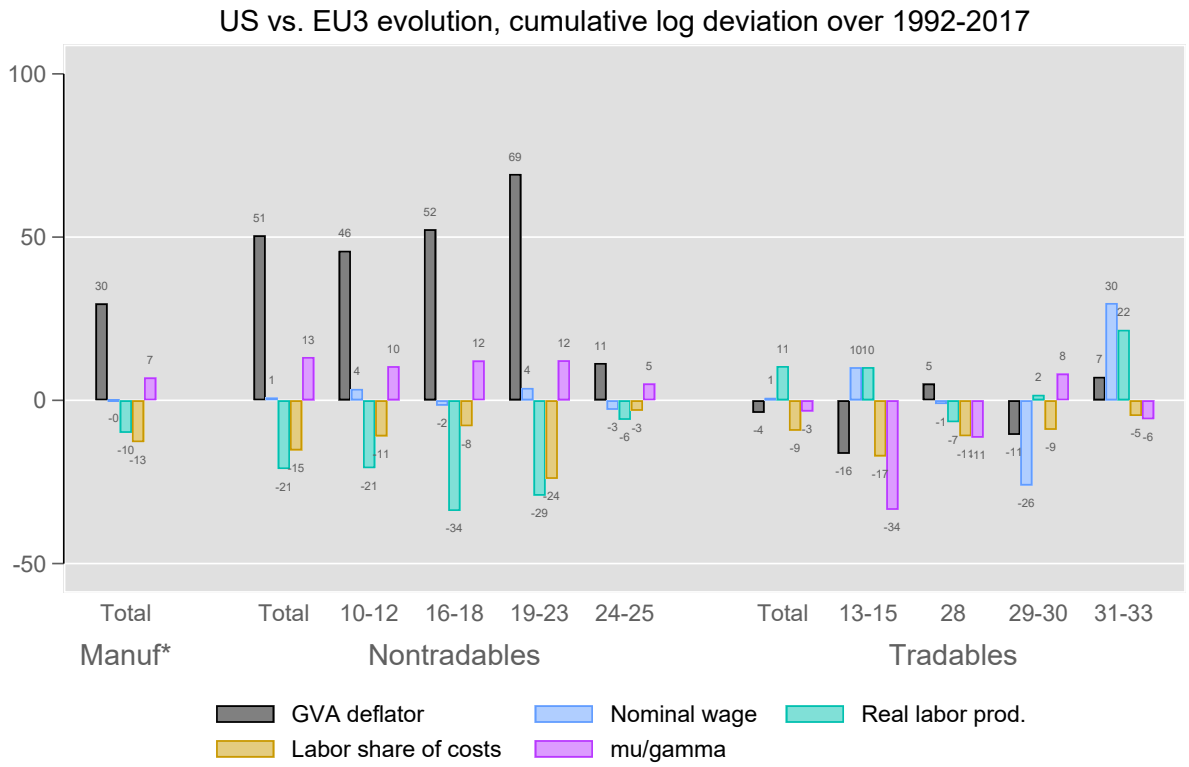
We further disaggregate manufacturing into the broad industry groups reported in STAN, focusing on non-technology manufacturing. Figure 4 shows the relative changes in prices, productivity, wages, labor cost shares, and markups net of returns to scale for the US versus the EU3, separately for all manufacturing excluding technology, for nontradables, and for tradables.

Price divergence is concentrated in nontradable industries and is generally associated with both slower productivity growth and faster increases in μ/γ in the US. In food manufacturing (ISIC 10–12) and wood and paper products (ISIC 16–18), US prices rose about 50p.p. more than in the EU3. In both cases, US labor productivity grew markedly slower, the labor cost share fell by around 10p.p. more in the US than in the EU, and μ/γ increased by 10p.p. more in the US. In chemicals and pharmaceuticals (ISIC 19–23), the divergence is even starker: US prices rose about 70p.p. more than in the EU, productivity growth lagged by 30p.p., the labor cost share fell by roughly 25p.p., and μ/γ grew by 10p.p. more. The only nontradable industry without a pronounced divergence is basic metals (ISIC 24–25), where productivity and cost shares evolved similarly across regions and μ/γ growth was modest in both.

By contrast, tradable industries—including textiles (13–15), machinery (28), transport equipment (29–30), and furniture (31–33)—show broadly parallel trends across regions in prices, productivity, and cost shares. In most tradable sectors, labor cost shares changed little in the EU and declined slightly in the US. These similarities reinforce the interpretation that shared technologies and competitive pressures limit sustained price divergence in tradables.

In Appendix Figure A.4, we show relative US prices and labor shares against trade intensity for an unbalanced panel of up to 33 OECD countries (US, 27 EU member states, UK, Canada, Turkey, Japan, South Korea). This suggests the divergence between the US and the median OECD country in nontradable manufacturing mirrors our baseline EU3 comparison, so the result is not driven by the specific choice of France, Germany, and Italy.

Figure 4: Industry-Level Divergence in Prices, Productivity, Labor Cost Shares, and Markups



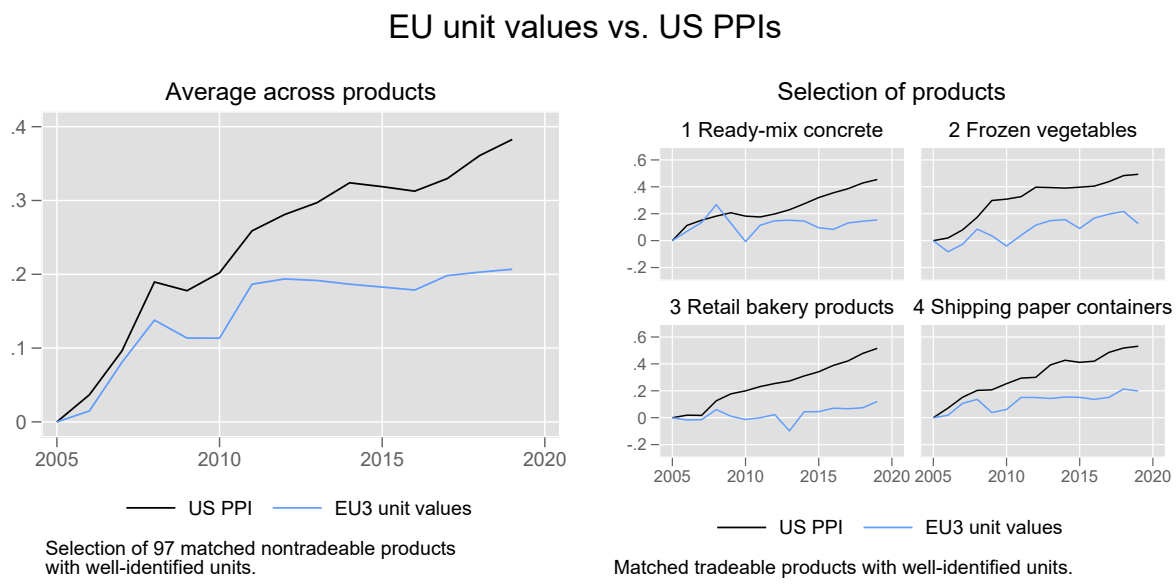
Notes: "Manuf*" excludes technology industries (ISIC 26–27). Industry definitions and tradability classifications follow Appendix A.1. Labor cost share and μ/γ changes are computed from the decomposition in Equation 2. The change is the GVA deflator is the sum of the changes in: nominal wage - real labor prod. - labor share of costs + mu/gamma. Source: authors' calculations using OECD STAN.

3.5 Product-level Prices

A potential limitation of the preceding analyses is their reliance on industry-level price indices, which may embed measurement error—particularly from differences in quality adjustment practices across countries. In Appendix Figure A.5, we show the results still hold when looking at a restricted sample of countries sharing similar PPI construction methodologies. To further assess whether such differences could drive our results, we then turn to narrowly defined, homogeneous products: goods with standardized units, consistent production methods, and minimal scope for quality change.

For the US, we compile product-level Producer Price Indices (PPIs) from the Bureau of Labor Statistics. For the EU, comparable product-level PPIs are not available. Instead, we draw on two sources: (i) EU Prodcom, which reports annual revenues and physical quantities at the product level, and (ii) the EU Short-Term Business Statistics (STS), which provides granular

Figure 5: Evolution of Prices for Homogeneous Nontradable Products: EU Prodcom Unit Values vs. US PPIs, log deviation from 2005



Notes: Sample includes 97 homogeneous nontradable products harmonized between US BLS PPI data and EU Prodcom unit values. EU Prodcom prices are not quality-adjusted. Source: authors' calculations.

industry-level PPIs at the NACE 4-digit level. To obtain prices in Prodcom, we compute unit values (revenues over quantities) for goods with consistent and homogeneous quantities across time and countries. Our main results are based on Prodcom, with STS-based results reported in Appendix A.6. Prodcom unit values are not quality-adjusted, so price increases are likely overestimated relative to US data for PPI categories in which quality adjustment is applied.

We match our selected products from Prodcom to US PPI by applying a two-stage LLM-based matching procedure to category names. First, we create sentence embeddings for each category name and compute pair-wise cosine similarities across the two lists. Then, we find the nearest match from Prodcom to US PPI by matching each Prodcom category to the closest US PPI by cosine similarity. As a second filter, we use a chat completion algorithm, which we ask to assign a production cost similarity score (0-10) for each pair of matched category names.[6] We keep all product categories with a cosine similarity greater than 0.9 and a cost similarity score above 8.

[6]We use the OpenAI text-embedding-ada-002 model to create the embeddings and gpt-3.5-turbo with the query *"For this pair of product descriptions separated by ||, assign a score from 0-10 to two decimal places, that measures how likely it is that they have the same production costs. For example, if two products use raw materials with the same cost, but employ different production processes, the score would be somewhere in between 0 and 10; if two products use identical raw materials and production processes, the score should be 10. Please output the score, and a very concise (one sentence maximum) explanation for how you chose the score. Please return the output as a tab-separated file, with the score in one column and the explanation in the next."* to obtain the cost similarity score.

Furthermore, we filter out product categories associated with tradable industry codes. Our final sample includes 97 nontradable products (out of approximately 1,700 total categories), which include, for example, homogeneous products such as Ready-mix Concrete and Frozen Vegetables.

Figure 5 shows the average price index across all products in the sample, as well as selected examples. Although the comparison period is limited to 2005–2018, the results align closely with our aggregate findings: US prices for these homogeneous nontradable products rose more than their EU counterparts, despite the absence of quality adjustment in the EU data. Price growth is slightly higher in this product-level sample than in the aggregate series. Still, the US–EU gap persists, suggesting that measurement differences alone cannot explain the divergence in nontradable manufacturing prices.

Summary. Taken together, the cross-country evidence paints a consistent picture. In tradable manufacturing, prices, productivity, labor cost shares, and μ/γ have evolved in near parallel across the US and EU, consistent with common global technologies and competitive pressures. In nontradable manufacturing, by contrast, US prices have risen far faster, driven by both slower productivity growth and a sharper decline in the labor cost share—accompanied by a much larger increase in μ/γ than in the EU. These patterns persist across industry definitions, product-level data, alternative price measures, and all robustness checks, and are not explained by wage growth or plausible measurement differences (see Appendix A for a detailed discussion of the different robustness analyses). The stability of tradable sectors suggests that the divergence in nontradables reflects differences in domestic market structure and exposure to competition.

4 Technology or Market Power?

The accounting decomposition in Section 2 attributes the US–EU nontradable price gap to slower productivity growth and rising μ/γ. But these components could interact: firms adopting different technologies might mechanically alter measured profit shares, and changes in returns to scale could explain trends in μ/γ. To disentangle technology from market power, we embed the decomposition in a CES production framework. By recovering distinct technology parameters—capital-augmenting, factor-neutral, and returns to scale—we can examine whether any plausible technology story explains the divergence.

4.1 Framework

Production function. We model industry output using a CES production function with increasing returns to scale:

$$Y^{\frac{1}{\gamma}} = z\left[a_k K^{\frac{\epsilon-1}{\epsilon}} + L^{\frac{\epsilon-1}{\epsilon}}\right]^{\frac{\epsilon}{\epsilon-1}}, \tag{3}$$

where $\gamma \geq 1$ is the degree of returns to scale and ϵ is the elasticity of substitution between capital and labor. This is a reparameterization of the standard CES $Y^{1/\gamma} = Z[\alpha(A_k K)^{\frac{\epsilon-1}{\epsilon}} + (1-\alpha)(A_l L)^{\frac{\epsilon-1}{\epsilon}}]^{\frac{\epsilon}{\epsilon-1}}$ that factors out labor-augmenting technology A_l and the distribution parameters.[7] As a result, a_k measures *relative* capital-augmenting technology—capturing automation and capital-biased technical change relative to labor-augmenting progress—while z measures factor-neutral productivity growth relative to labor-augmenting change.

Cost minimization and measurement equations. Denote the input bundle as $X \equiv \left[a_k K^{\frac{\epsilon-1}{\epsilon}} + L^{\frac{\epsilon-1}{\epsilon}}\right]^{\frac{\epsilon}{\epsilon-1}}$, so that production is $Y^{1/\gamma} = zX$. Solving the cost minimization problem $\min_{K,L} \; R_k K + WL$ subject to a given X yields factor demand curves linking a_k to observable factor ratios and prices. Together with the production function and the definition of revenues relative to costs, we obtain three measurement equations in five unknowns (μ, γ, ϵ, a_k, z):

$$\ln z = \frac{1}{\gamma} \ln Y - \ln X \tag{4}$$

$$\ln a_k = \ln\left(\frac{K}{L}\right) - \epsilon \ln\left(\frac{W}{R_k}\right) \tag{5}$$

$$\ln \frac{\mu}{\gamma} = \ln\left(\frac{PY}{WL + R_k K}\right) \tag{6}$$

Equation (5) follows from cost minimization: it determines relative capital-augmenting technology from observed factor ratios and prices. Equation (6) is an identity: markups net of returns to scale equal the revenue-to-cost ratio, directly observable irrespective of the pricing game. Equation (4) recovers factor-neutral technology as the residual, conditional on γ.

Parameter identification. With three equations and five unknowns, we need two external inputs. Table 1 summarizes the identification chain. We measure the user cost of capital R_k following the approach in Section 3. We treat ϵ as fixed and use industry-level estimates from Oberfield and Raval (2021), reported in Appendix Table A.3; this pins down μ/γ and a_k. For z and μ, we additionally need γ. In our baseline we set $\gamma = 1.05$, consistent with estimates in Basu and Fernald (1997), Covarrubias et al. (2019), and De-Loecker et al. (2019). We relax this assumption below.

4.2 Model-implied technology and markups

Figure 6 presents the recovered technology and market-power parameters for tradable and non-tradable manufacturing in the US and EU3, expressed as log deviations from 1992 values. The

[7] Specifically, a_k is a composite of α, A_k and A_l, while z absorbs Z, A_l, α and $(1-\alpha)$. Since A_l is not separately identified, all technology measures are expressed relative to labor-augmenting change.

Table 1: Recoverable parameters under different assumptions

Assumptions	**Recoverable Parameters**
R_k	$\frac{\mu}{\gamma}$
$+\ \epsilon$	$\frac{\mu}{\gamma}$, a_k
$+\ \gamma$	μ, γ, a_k, z

key finding emerges from comparing the four panels:

Factor-neutral technology (z). Relative factor-neutral productivity evolves similarly across all four region–sector cells. Both US and EU3 show comparable z growth in both tradable and nontradable sectors, with no systematic divergence. Factor-neutral technology therefore cannot explain any transatlantic price gap.

Capital-augmenting technology (a_k). Capital-augmenting technology grew faster in the US than in the EU3 for *both* tradable and nontradable sectors, and within each region, a_k grew faster in tradables. The US–EU gap in a_k reflects a common pattern: the ratio W/R rose more in the EU3, but K/L increased by roughly the same amount (tradables) or by significantly less (nontradables), implying that the relative productivity of capital rose more in the US. Critically, however, this US advantage in a_k is *symmetric* across tradable and nontradable sectors—it cannot explain why nontradable prices diverged while tradable prices did not.

Markups net of returns to scale (μ/γ). μ/γ is the only parameter where US nontradables stand out. In tradable manufacturing, μ/γ rose by roughly 15% in both the US and EU3. In nontradable manufacturing, it rose by 23% in the US but only 10% in the EU3. No comparable divergence appears in any technology parameter.

Figure 6: Model-implied technology and markups



Bounding the level of markup growth. clean this up A natural concern is whether the rise in μ/γ might reflect declining returns to scale (γ) rather than rising markups (μ). Even for the *level* of US nontradable markup growth (not just the gap), the scope for γ to alter the conclusion is limited. Since $\ln \mu = \ln(\mu/\gamma) + \ln \gamma$ and $\gamma \geq 1$ (production cannot exhibit decreasing returns in the long run), any decline in γ requires that it started above 1. The observed cumulative increase in US nontradable $\ln(\mu/\gamma)$ is 0.27 log points. For this to reflect *entirely* falling γ with no change in μ, we would need $\Delta \ln \gamma = -0.27$, implying that γ started at $e^{0.27} \approx 1.31$ and fell all the way to constant returns. Manufacturing estimates of γ in the literature, however, cluster around 1.0–1.1 (Basu and Fernald, 1997, **?**), leaving at most $\Delta \ln \gamma \approx -0.10$—far too small to account for the observed increase.

Interpretation. This section leads to a clear conclusion. Across all cells, technology parameters (a_k, z) follow qualitatively similar paths: the US has faster capital-augmenting change (consistent with greater automation), but this is a level difference between regions, not between sectors. The *only* structural parameter exhibiting a region$\times$sector interaction is the markup-to-scale ratio μ/γ. This supports the interpretation that rising market power, rather than differential technology adoption, accounts for the US nontradable price divergence.

Summary. After ruling out wages, factor-neutral technology, capital-augmenting technology, returns to scale, and demand composition, the only structural parameter that can account for the US nontradable price divergence is μ: markups rose in US nontradable manufacturing in a way that has no counterpart in tradables or in the EU. This conclusion motivates the causal analysis in Section 5, which uses variation in trade exposure to identify the competitive forces—or their absence—behind these markup dynamics.

5 Causal Evidence from US Industries

The cross-country patterns in Section 3 suggest that the divergence in nontradable manufacturing prices between the US and EU reflects domestic factors—particularly differences in market structure and exposure to competition—rather than global technology trends. To investigate these mechanisms more directly, we turn to US industry-level data, which allow for richer controls, causal identification, and a closer link to the forces shaping μ/γ.

Data. Our analysis is based detailed industry data from the NBER–CES Manufacturing Industry Database which provides gross output prices as well as wages, employment, intermediate inputs and capital stock for NAICS-6 industries. This enables computation of labor shares and profit shares at a fine level of disaggregation. We use the same cost of capital as above (see Section 3.1 for a description).

We combine these data with import data from Schott (2008) and the permanent normal trade relations (PNTR) measure of trade liberalization (Pierce and Schott, 2016). We define import penetration as imports divided by the sum of domestic shipments and imports. The PNTR measure captures industry-level variation in tariff uncertainty reductions following China's WTO accession, and serves as an instrument for import penetration in our regression specifications.

5.1 Import Penetration and Industry Outcomes: Binned Scatterplots

We begin by presenting binned scatterplots relating changes in prices, labor shares, and profit shares to changes in import penetration at the NAICS-6 level. Each plot groups industries into 25 equal-sized bins by their change in import penetration between year t and $t+5$, and plots the average outcome change against the average change in import penetration within each bin. Plots control for year fixed effects.

Figure 7 summarizes the unconditional relationships. Industries experiencing larger increases in import penetration tend to see: (i) slower price growth, (ii) increasing labor shares, and (iii) decreasing profit shares, corresponding to weaker growth in μ/γ.

5.2 Regression Estimates with PNTR Instrument

We next quantify the relationship between trade exposure and industry prices, labor and profit shares a using panel regressions of the form:

$$\Delta \log y_{it} = \beta \, \Delta \text{IP}_{it} + \alpha_i + \delta_t + \gamma X + \varepsilon_{it}, \tag{7}$$

where y_{it} denotes producer prices, labor shares, or profit shares in industry i and year t, ΔIP_{it} is the change in import penetration, α_i are industry fixed effects, and δ_t are year fixed effects. Last, X denotes a vector of controls.

Table 1 presents the results using import penetration directly. As shown, a 10% increase in import penetration is correlated with a 2.7% decline in prices, a 5.7% increase in labor shares and a 16.6% decrease in profit shares. These magnitudes are economically large: the US nontradable manufacturing sector experienced an average import penetration increase of roughly XX% less than tradables since 2000, enough to explain a substantial fraction of the observed price divergence. The results are robust to including a variety of controls.

To address potential endogeneity—such as reverse causality from domestic price changes to imports and measurement error from capital estimates — the last column instruments $\log \text{IP}_{it}$ with the PNTR-based measure of tariff uncertainty reductions from Pierce and Schott (2016). The instrument interacts pre-PNTR differences between US tariffs with a post-2001 indicator, generating cross-industry variation in the plausibly exogenous shock from China's WTO accession.

Figure 7: Binned Scatterplots: Changes in Outcomes vs. Changes in Import Penetration



Notes: Each dot represents an equally sized bin of NAICS-6 industries sorted by change in import penetration. Vertical axes: changes in prices, labor shares, and profit shares between start and end years. Horizontal axis: change in import penetration over the same period. Sources: authors' calculations using NBER–CES and Pierce and Schott (2016).

Combined, these results reinforce the cross-country patterns documented above. Industries more exposed to trade liberalization in the US experienced weaker price growth and slower expansion of market power.

6 Conclusion

This paper has examined the joint evolution of prices, productivity, and income shares in US and EU manufacturing using a transparent decomposition of value-added prices into unit labor costs, labor cost shares, and markups net of returns to scale.

Our central finding is that the sharp rise in US nontradable manufacturing prices over the past 25 years is not explained by wage growth, productivity trends, or capital deepening, but by

Table 2

	$\log P_{i,t}$		$\log LS_{i,t}$	$\log PS_{i,t}$	
	(1)	(2)	(3)	(4)	(5)
$\log IP_{i,t}$	-0.27**	-0.19**	0.57**	-1.66**	-4.00**
	(0.10)	(0.06)	(0.14)	(0.30)	(1.20)
$\log LP_{i,t}$		-0.22**			
		(0.03)			
$\log w_{i,t}$		0.38**			
		(0.06)			
$\log P^{mat}_{i,t}$		0.74**			
		(0.06)			
$\log P^{ene}_{i,t}$		0.11+			
		(0.06)			
Ind FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
R2	.82	.91	.95	.78	-.036
Observations	1,213	1,213	1,213	1,171	1,164

a sustained increase in markups net of scale effects. Tradable manufacturing, by contrast, shows parallel trends in prices, productivity, and markups across the US and EU, consistent with common global technology shocks and competitive discipline from trade.

Within the US, industry-level evidence confirms that greater import penetration—especially from China following PNTR—lowers prices, raises labor cost shares, and reduces profit shares. Moreover, when we measure market power using profit shares rather than gross markups, firm-level increases in profitability align closely with rising industry-level markups, reconciling earlier findings that gross markups alone are weakly correlated with prices.

These results underscore three broader points. First, prices provide a direct welfare-relevant measure of market power's impact—one that incorporates both cost pressures and pass-through. Second, separating tradable from nontradable sectors is essential: the forces shaping each are distinct, and policy aimed at one will not necessarily affect the other. Third, measurement choices matter—differences in quality adjustment and index construction can shift levels, but the US–EU nontradables divergence persists across robust specifications.

A natural interpretation of our findings is that, while global competition keeps tradable prices in check, non-tradable manufacturing remains vulnerable to weak competitive pressure. Strengthening antitrust enforcement, targeting regulation in concentrated supply chains, and improving the measurement of subtle quality changes are essential steps to ensure that productivity gains are passed through to consumers.

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Online Appendix

A Cross-Country Analyses: Robustness

This appendix presents the following robustness analyses for cross-country comparisons:

- **Definition of tradability:** Table A.1 shows our industry list, their opennes ratio and the associated categorization into tradable and non-tradable industries. Our baseline classifies industries as tradable if their US trade-to-production ratio is above the manufacturing average. Reclassifying industries using thresholds 10 percentage points higher or lower produces virtually identical results. The US–EU divergence in nontradables remains large and the absence of divergence in tradables persists.

- **Price index construction details:** Table A.2 provides details on the price index construction methodologies by countries. We use this categorization when restricting our comparison to countries with similar methodologies as described below.

- **Alternative capital cost measurement:** Figure A.1 measures R with no capital gains and fixed opportunity cost of capital/risk premia.

- **Decomposition using gross output prices:** Figure A.2 shows the decomposition using gross output (GO) price series instead of value-added (VA) prices. We use the following decomposition:

$$\Delta \log P^{GO} = \Delta \log W - \Delta \log \frac{GO^q}{N} - \Delta \log c_L + \Delta \log \frac{\mu}{\gamma} - \Delta \log \frac{VA^n}{GO^n}, \qquad \text{(A.1)}$$

  where productivity is based on Gross Output quantities, and $\Delta \log \frac{VA^n}{GO^n}$ controls for the intermediate input share. All other objects are defined as before. The US–EU gap in nontradables remains large and statistically significant.

- **Decomposition using inflation-adjusted prices:** Figure A.3 shows the industry-level decomposition adjusting nominal objects for inflation. The US–EU divergence in nontradables is unaffected, confirming that it is not an artifact of differential aggregate inflation rates.

- **Broader country sample:** Figure A.4 shows a scatterplot of relative US prices and labor shares against trade intensity for an unbalanced panel of up to 33 OECD countries (US, 27 EU member states, UK, Canada, Turkey, Japan, South Korea). The divergence between the US and the median OECD country in nontradable manufacturing mirrors our baseline EU3 comparison, showing that the result is not driven by the specific choice of France, Germany, and Italy.

- **Country sample with sharing similar PPI methodologies:** Figure A.5 restricts the sample to countries that use arithmetic averaging and either production-cost, option-cost, or no quality adjustment. The last category likely overstates inflation, which works against finding a US–EU divergence. Even under this conservative restriction, the divergence in nontradable manufacturing prices persists.

- **Alternative EU product-level prices:** Figure A.6 shows a comparison of product-level prices based on EU Short-Term Business Statistics PPIs at the NACE 4-digit level. The results closely match the Prodcom-based findings.

Table A.1: Defining tradable and non-tradable sectors

		Openness ratio, %		
		US 1992-2017	US+EU3 1992-2017	US+EU3 2000
Non-tradeable manufacturing industries				
C10T12	Food products, beverages & tobacco	15.5	34.1	29.7
C16T18	Wood and paper products, printing	17.2	37.2	36.3
C24T25	Basic metals and fabricated metal products	28.6	52.9	48.3
C19T23	Chemical & pharma, rubber, plastics, fuel	32.0	71.3	60.4
Tradeable manufacturing industries				
C31T33	Furniture; other manufacturing	58.8	50.3	43.8
C29T30	Transport equipment	59.0	95.5	91.8
C28	Machinery and equipment n.e.c.	66.3	93.8	85.4
C13T15	Textiles, wearing apparel, leather	138.9	169.0	121.3
Tech manufacturing				
C26T27	Electrical, electronic & optical equipment	106.2	135.8	123.9

Source: authors' calculations using OECD STAN. Note: nominal trade (imports+exports) to gross output. Average over 1992-2017 unless specified otherwise, and EU3 includes France, Germany, Italy.

Table A.2: Summary of price and quality adjustment methods

Country	**Type of prices**	**Activity Classification**	**Computation of lowest level indices**	**Aggregation formula**	**Frequency of weight updates**	**Explicit quality adjustment**
United States	..	NAICS	AR	Modified Laspeyres	Every 5 years	Prod. cost

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Table A.2 – continued from previous page

Country	Type of prices	Activity Classification	Computation of lowest level indices	Aggregation formula	Frequency of weight updates	Explicit quality adjustment
Australia	Basic prices	ANZSIC 2006	AR	Modified Laspeyres	Annually	Option cost
Czech Republic	..	NACE Rev. 2	AR	Modified Laspeyres	Every 5 years	Option cost
France	Basic prices	NACE Rev. 2	AR	Fixed base Laspeyres	Every 5 years	None
Germany	Producer prices	NACE Rev. 2	AR	Modified Laspeyres	Every 5 years	Option cost
Greece	Basic prices	NACE Rev. 2	AR (UW)	Fixed base Laspeyres	Every 5 years	Quantity
Hungary	Basic prices	NACE Rev. 2	AR (UW)	Chained Laspeyres	Annually	None
Israel	Purchaser prices	SIC 1993	AR	Chained Laspeyres	Every 5 to 10 years	Quantity
Korea	..	KSIC 2007	AR	Fixed base Laspeyres	Every 5 years	Prod. cost
Luxembourg	Producer prices	NACE Rev. 2	AR	Fixed base Laspeyres	Every 5 years	None
Portugal	Basic prices	NACE Rev. 2	AR (UW)	Fixed base Laspeyres	Every 5 years	None
Slovak Republic	..	NACE Rev. 2	AR	Modified Laspeyres	Every 5 years	Option cost
Slovenia	Basic prices	NACE Rev. 2	AR (UW)	Chained Laspeyres	Annually	Multiple
Spain	Basic prices	NACE Rev. 2	AR (UW)	Fixed base Laspeyres	Every 5 years	None
Sweden	Basic prices	NACE Rev. 2	AR	Chained Laspeyres	Annually	Multiple
Turkey	..	NACE Rev. 1	AR	Fixed base Laspeyres	Annually	None

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Table A.2 – continued from previous page

Country	Type of prices	Activity Classification	Computation of lowest level indices	Aggregation formula	Frequency of weight updates	Explicit quality adjustment
Austria	Basic prices	NACE Rev. 2	GM	Chained Laspeyres	Annually	Explicit / Implicit
Belgium	..	NACE Rev. 2	..	..	..	..
Canada	Basic prices	NAICS	RA	Fixed base Laspeyres	Every 5 years	..
Chile	Basic prices	ISIC Rev. 3	GM	Fixed base Laspeyres	10 years	..
Denmark	Basic prices	NACE Rev. 2	GM	Fixed base Laspeyres	Every 5 years	Implicit
Estonia	Basic prices	NACE Rev. 2	RA	Chained Laspeyres	Annually	No quality adjustment
Finland	..	NACE Rev. 2	GM	Fixed base Laspeyres	Change as required	Explicit / Implicit
Iceland	..	NACE Rev. 1	GM	Fixed base Laspeyres	Annually	Explicit
Ireland	Producer prices	NACE Rev. 2	RA	Fixed base Laspeyres	Every 5 years	..
Italy	Basic prices	NACE Rev. 2	GM	Chained Laspeyres	Annually	Implicit
Japan	Purchaser prices	JSIC	GM	Chained Laspeyres	Every 5 years	Explicit / Implicit
Mexico	..	CMAE-99	..	Fixed base Laspeyres	Not defined	Explicit
Netherlands	Basic prices	NACE Rev. 2	GM	Fixed base Laspeyres	Every 5 years	Explicit / Implicit
New Zealand	Basic prices	ANZSIC 2006	GM	Fixed base Laspeyres	5-10 years	Implicit
Norway	Basic prices	NACE Rev. 2	GM	Chained Laspeyres	Annually	Explicit

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Table A.2 – continued from previous page

Country	Type of prices	Activity Classification	Computation of lowest level indices	Aggregation formula	Frequency of weight updates	Explicit quality adjustment
Poland	Basic prices	NACE Rev. 2	RA	Chained Laspeyres	Every 5 years	No quality adjustment
Switzerland	Basic prices	NACE Rev. 2	GM	Fixed base Laspeyres	Every 5 years	Explicit
United Kingdom	Basic prices	NACE Rev. 2	RA	Fixed base Laspeyres	Every 5 years	Explicit

Figure A.1: Alternative measures of returns to capital

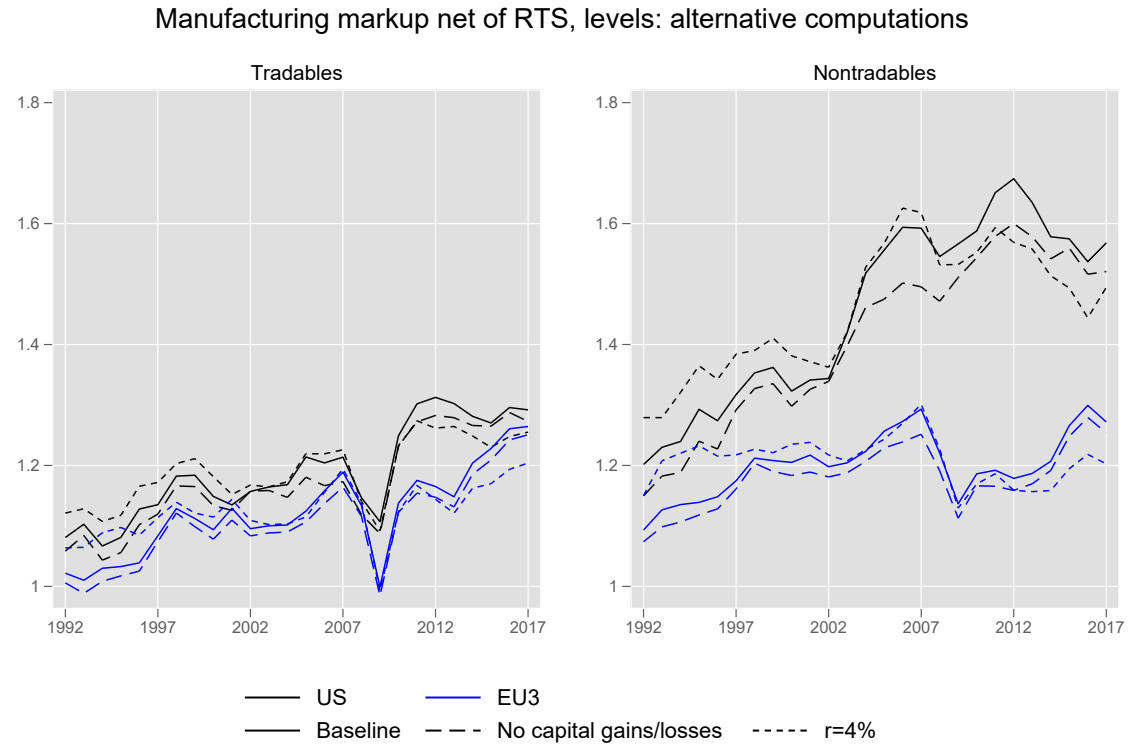


Figure A.2: Decomposition using gross output prices, log deviation from 1992

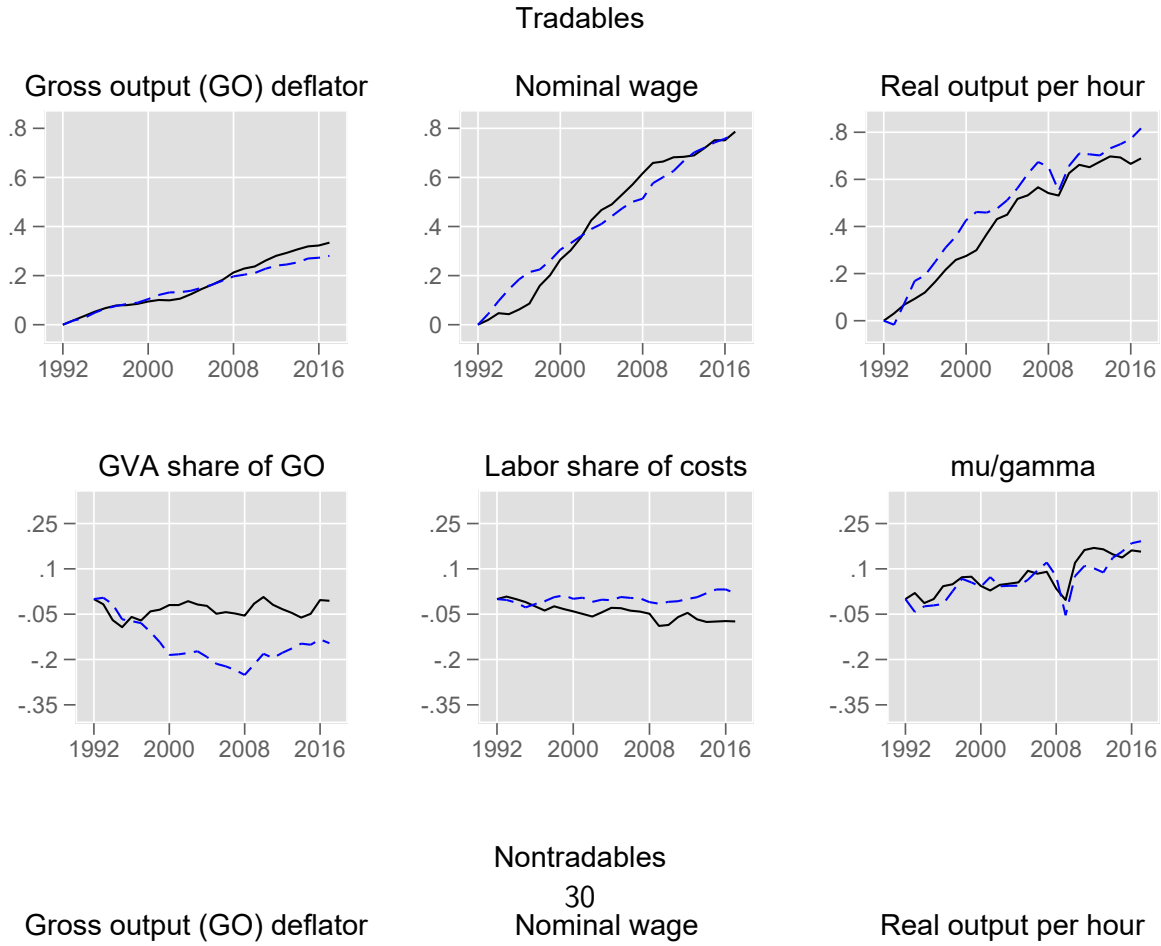
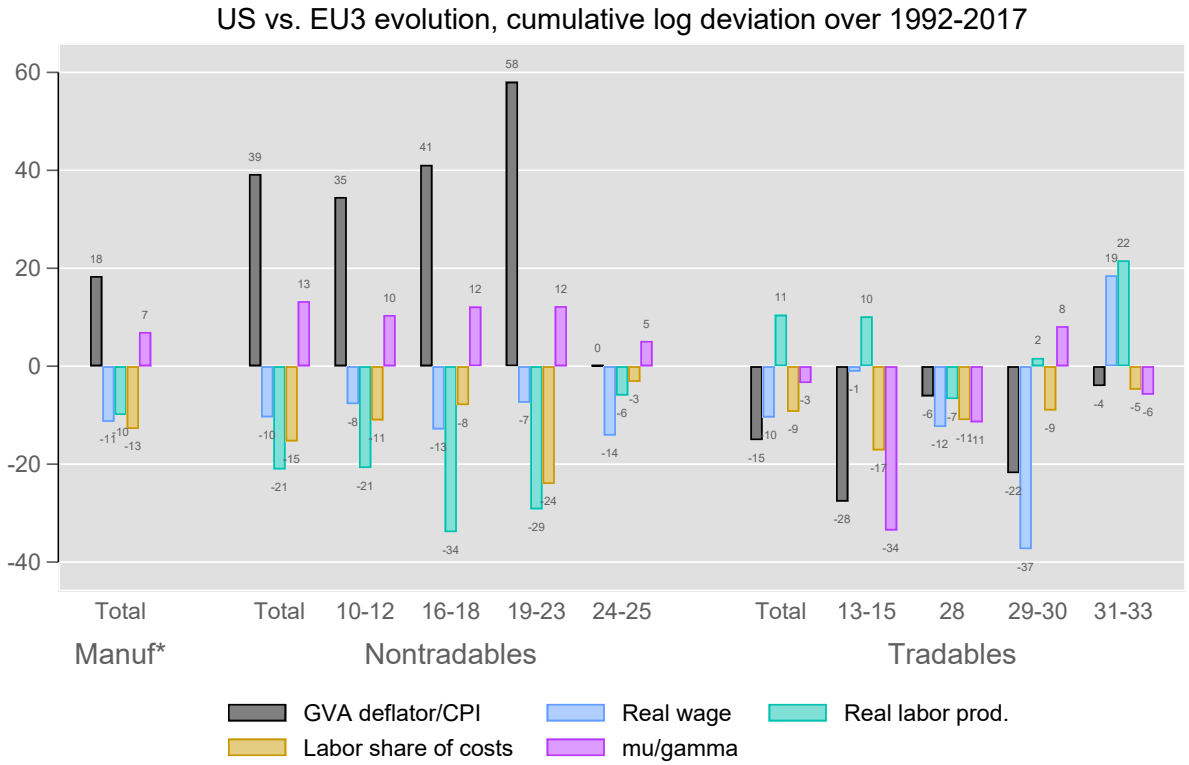
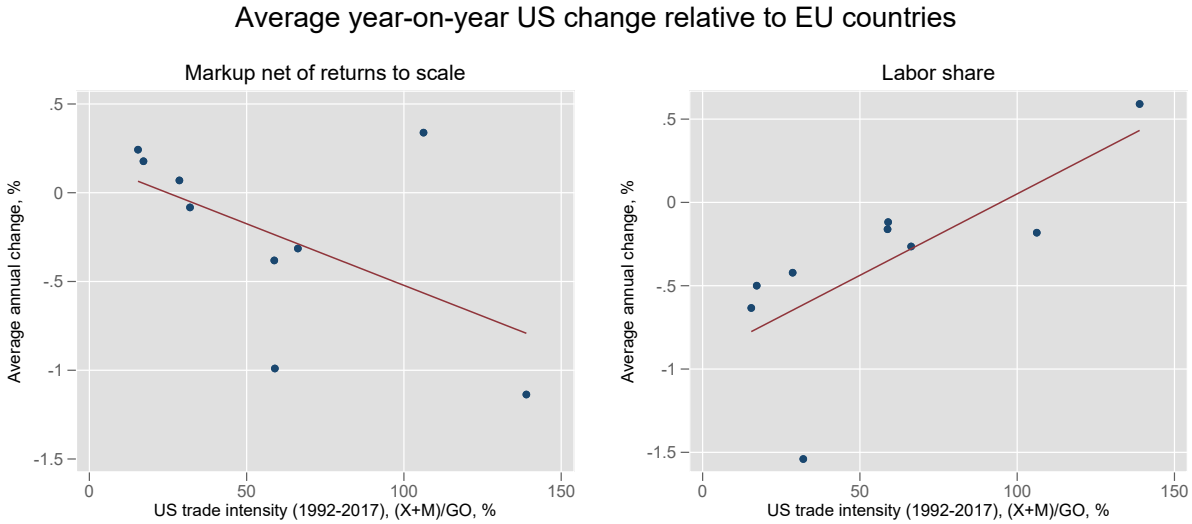


Figure A.3: Industry-Level Divergence in Prices, Productivity, Labor Cost Shares, and Markups, deflated using the CPI



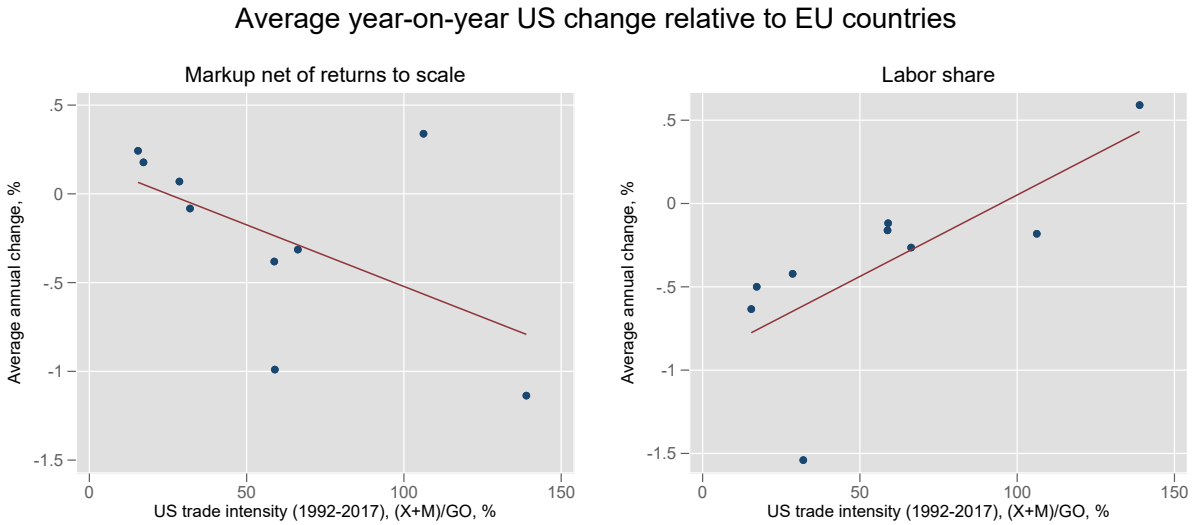
Notes: "Manuf." excludes technology industries (ISIC 26–27). Industry definitions and tradability classifications follow Appendix A.1. Labor cost share and μ/γ changes are computed from the decomposition in Equation 2. Source: authors' calculations using OECD STAN and the Jordà-Schularick-Taylor Macrohistory dataset.

Figure A.4: Broader set of countries



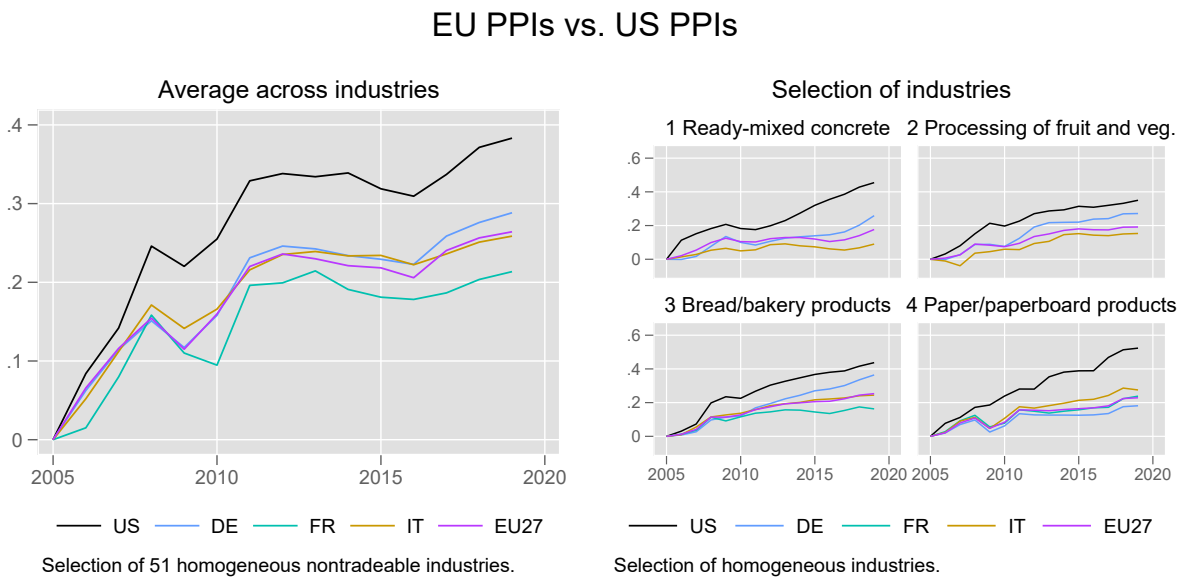
Data for up to 8 countries and 9 manufacturing industries over 1971-2019.
Only includes countries with similar price aggregation methodology.

Figure A.5: Selection of countries with common PPI methodologies



Data for up to 8 countries and 9 manufacturing industries over 1971-2019.
Only includes countries with similar price aggregation methodology.

Figure A.6: Evolution of prices of homogeneous nontradeable products: EU vs. US PPIs



Selection of 51 homogeneous nontradeable industries.

Selection of homogeneous industries.

Table A.3: Industry Elasticities from Oberfield and Raval (2021)

Industry (O&R)	**Elasticity**	**Tradable**	**ISIC Code**	**Sector Description**
Food	0.77	NT	C10T12	Food products, beverages & tobacco
Lumber	0.60	NT	C16T18	Wood and paper products, printing
Paper	0.70	NT	C16T18	Wood and paper products, printing
Printing	0.60	NT	C16T18	Wood and paper products, printing
Stone	0.70	NT	C19T23	Chemical & pharma, rubber, plastics, fuel
Chemicals	0.63	NT	C19T23	Chemical & pharma, rubber, plastics, fuel
Petroleum	0.63	NT	C19T23	Chemical & pharma, rubber, plastics, fuel
Rubber	0.75	NT	C19T23	Chemical & pharma, rubber, plastics, fuel
Fabricated metals	0.50	NT	C24T25	Basic metals and fabricated metal products
Furniture	0.30	NT	C31T33	Furniture; other manufacturing
Miscellaneous	0.50	NT	C31T33	Furniture; other manufacturing
Textiles	0.90	T	C13T15	Textiles, wearing apparel, leather
Leather	0.88	T	C13T15	Textiles, wearing apparel, leather
Apparel	1.05	T	C13T15	Textiles, wearing apparel, leather
Primary metal	0.90	T	C24T25	Basic metals and fabricated metal products
Electrical mach	0.60	T	C26T27	Electrical, electronic & optical equipment
Instruments	0.75	T	C26T27	Electrical, electronic & optical equipment
Machinery	0.60	T	C28	Machinery and equipment n.e.c.
Transport	0.80	T	C29T30	Transport equipment