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Market Power in Mexican Industries

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ABSTRACT: This paper studies market power in Mexican industries over the period 2008-23 using establishment-level data from the Mexican Economic Census. We document a substantial increase in the average price markup over marginal costs, from 12 percent in 2008 to 27 percent in 2023. The sources of this increase vary across sectors and time: services, particularly wholesale and retail trade, account for most of the increase in markups until 2018, while manufacturing, led by transportation equipment and export-oriented industries, plays a larger role in more recent years. Rising markups in services are associated with greater local labor market concentration, suggestive of increasing monopsony power. In manufacturing, markup growth is linked to higher capital expenditure, consistent with firms sustaining larger markups to recover higher fixed costs. Moreover, rising markups in manufacturing are positively associated with total factor productivity, whereas in services they are uncorrelated with productivity. Overall, these findings suggest that while market power has increased over time, its underlying drivers have shifted from monopsonistic power in labor markets to higher fixed costs, with more favorable efficiency implications in recent years.

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WORKING PAPERS

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Contents

I. Introduction

After decades of focusing on macroeconomic stability, a central policy question in Latin America today is how to unlock productivity and achieve higher and sustained growth (e.g., IMF, 2025; Alviarez et al., 2025; Vostroknutova et al., 2025). A growing concern in this debate is market power: firms in the region often operate with high markups, with potential consequences for prices, wages, and business dynamism (e.g., Eslava et al., 2025; Alviarez et al., 2025). However, there is limited consensus on what drives these patterns or on their aggregate implications. Much of the existing evidence is based on national aggregates, leaving within-country variation, crucial for understanding mechanisms and informing policy, largely unexplored.

This paper studies market power in Mexican industries from 2008 to 2023 using rich establishment-level Census data. We provide new evidence on both the sources of changes in aggregate markups over time and the associated efficiency implications. The analysis proceeds in three steps. First, we document aggregate trends in markups and identify the industries driving these changes. Second, we analyze the relationship between markups and market concentration by developing a simple theoretical framework that delivers a closed-form expression linking markups to both product- and input-market concentration. The framework yields predictions about the roles of monopoly and monopsony forces in markup variation, which we test in the data. We also explore the role of fixed costs by examining whether industries with larger increases in markups also experienced higher capital expenditures. Finally, to assess whether rising markups reflect efficiency gains or losses, we examine their relationship with total factor productivity (TFP) growth and the marginal revenue products of capital and labor.

Mexico is a particularly informative setting for studying market power in Latin America. The country has experienced low and stagnant growth, along with persistently weak total factor productivity, and high market power is often cited as an important contributing factor (Hsieh & Klenow, 2014; Levy, 2018; Iacovone et al., 2022). At the same time, the Mexican Economic Census provides rich establishment-level data, uncommon in developing-country contexts, allowing a detailed examination of the evolution of market power across industries and its relationship with economic outcomes.

We find that market power in Mexico increased sharply between 2008 and 2023, with average price markups over marginal costs growing from roughly 12 percent in 2008 to 27 percent in 2023. However, behind this aggregate trend, we find that the sources of aggregate markups have changed over time: services, especially wholesale and retail trade, accounted for most of the growth in the first decade, while manufacturing, led by transportation equipment and export-oriented industries, played a more prominent role in the most recent years.

We also document differences between formal and informal establishments. Throughout most of the sample period, formal firms exhibited higher markups than informal firms, consistent with their greater scale, market share, and bargaining power. However, this gap narrowed and ultimately reversed by 2023, particularly in services, as markups declined among formal establishments while continuing to rise among informal firms. This reversal coincides with labor market reforms that disproportionately increased labor costs for formal firms, suggesting a reduction in their ability to exercise labor market power.

Our results also reveal that aggregate trends in market power mask important heterogeneity in terms of the economic drivers. In the services industry, higher markups are linked to greater concentration in local labor markets, consistent with increasing monopsony power. In manufacturing, markup growth is instead driven by higher capital expenditures, consistent with increasing fixed costs (which lead firms to sustain higher markups over marginal cost to recover investments). Moreover, while markup growth in manufacturing is positively correlated with TFP and the marginal revenue product of capital (MRPK), in services it is uncorrelated with TFP and negatively associated with the marginal revenue product of labor (MRPL).

Related Literature. This paper contributes to two main strands of the literature. First, it adds to a growing body of literature studying the causes and consequences of market power. Most of the existing evidence comes from advanced economies, and there is little consensus on either the extent of the rise in market power or its implications. While some studies document significant increases in markups (De Loecker & Eeckhout, 2018; De Loecker & Eeckhout, 2020), others challenge these findings by addressing empirical measurement concerns (Benkard et al., 2025). Similarly, the consequences of rising market power remain debated. Some studies associate higher markups with declining productivity and weaker investment, while others link them to improved production technologies, lower marginal costs, greater investment, and innovation (Syverson, 2019; Covarrubias et al., 2020; Dopper et al., 2025; Miller, 2025). Regarding developing countries, the evidence is more limited and focuses largely on cross-country comparisons (Heresi, 2024; Eslava et al., 2025; Alviarez et al., 2025). By exploiting both time series and 6-digit industry-level variation, this paper provides new evidence on the potential sources and implications of rising market power in the developing world.

Second, this paper contributes to the literature on the determinants of weak productivity and economic growth in Mexico. Persistent resource misallocation has been identified as a key structural factor behind these patterns (Hsieh & Klenow, 2014; Levy, 2018; Iacovone et al., 2022). At the same time, recent work using national accounts data challenges the view that market power in Mexico reduces aggregate efficiency by showing a positive correlation between increases in markups and output growth, value added, and productivity (Rivera-Padilla, 2023). We add to this existing literature by studying the evolution of market power in Mexico using detailed 6-digit industry-level data to provide new evidence on its drivers and role in shaping productivity dynamics.

The remainder of the paper proceeds as follows. Section II describes the data sources and defines the key variables used in the analysis. Section III documents aggregate markup trends over the period 2008–2023 and disaggregates these patterns between manufacturing and services. Section IV examines the relationship between industry-level markups and market concentration measures, as well as the role of higher fixed costs. Finally, Sections V and VI study the efficiency implications of rising markups and present concluding remarks, respectively.

II. Data and Key Variables

Our main data source is the Mexican Economic Census, which provides comprehensive information on establishments' economic activity. Conducted every five years, the census records activity carried out between January and December of the preceding year. A key advantage of this dataset is its broad coverage: it includes the universe of non-agricultural firms, both formal and informal, with fixed establishments in urban areas. We use four waves of the census (2009, 2014, 2019, and 2024), corresponding to establishments' outcomes in 2008, 2013, 2018, and 2023.

Although the census collects information at establishment level, data accessibility constraints require us to conduct the analysis using aggregates at the six-digit industry level, constructed from the underlying establishment-level records. We harmonize all waves to the 2024 six-digit SCIAN classification (*Sistema de Clasificación Industrial de América del Norte*) and restrict the sample to industries that are consistently observed throughout 2008–23. Our analysis focuses on the manufacturing and services sectors, yielding a balanced sample of 659 six-digit industries. We exclude finance and insurance as markups are difficult to measure reliably in these industries (Benkard et al., 2025).

The use of industry-level aggregates prevents us from directly examining within-industry dynamics, such as the reallocation of activity across establishments or firm entry and exit, which may also contribute to the evolution of markups. Our analysis focuses instead on aggregate industry-level trends and provides a foundation for future work using establishment-level panel data to study these mechanisms in greater detail.

Markups. We approximate market power using markups estimated at the 6-digit industry level. To do so, we follow the standard production approach, which derives markups from the cost-minimization problem of a firm i with production function $Y_i(A_i, V_i, K_i)$, where V_i denotes variable inputs, K_i capital, and A_i productivity. The prices of output and variable inputs are expressed as P_i and P_i^V, respectively. Taking the first-order condition with respect to the variable input yields the following expression for markups:

$$\mu_i = \frac{\theta_{V_i}}{s_{V_i}} \text{ with } s_{V_i} = \frac{P_i^V V_i}{P_i Y_i}$$

Where θ_{V_i} and s_{V_i} are the output elasticity with respect to the variable input and the cost share of the variable input, respectively. When the firm does not have market power in its product market, this ratio equals 1, implying that the contribution of each flexible factor of production to output equals its cost share in revenues. Markups above one measure the extent to which price exceeds marginal cost.

The production approach offers two main advantages over alternative methods for estimating markups. First, it relies solely on firm-level data (e.g., total revenue and expenditures on variable inputs), which are typically available in firms' financial statements, whereas product-level prices or marginal costs are rarely observed in this context. Second, markup estimation requires only the relatively weak assumption that firms minimize the cost of producing their chosen level of output, avoiding the stronger assumptions about market structure that demand-based approaches require.

Importantly, aggregating firm-level markups requires assigning weights. Sales-weighted markups capture both pricing behavior and structural changes in market shares driven by sales, whereas cost-weighted markups better isolate firms' pricing power by limiting the influence of changes in sales shares. Thus, our focus is on cost-weighted markups defined as:

$$\sum_{i \in N} \omega_i \cdot \mu_i \text{ with } \omega_i = \frac{COGS_i}{\sum_{i \in N} COGS_i}$$

where ω_i is the share of firm i in total costs of goods sold ($\sum_{i \in N} COGS_i$) in a given industry with N firms.[1]

Assuming that firm-level output elasticities are common within an industry ($\theta_V = \theta_{V_i}$), this cost-weighted measure is equivalent to the following industry-level estimator (see Appendix B for derivation):

[1] When aggregating 6-digit industry measures to broader sectors or the national level, we apply the same cost-weighting approach.

$$\sum_{i\in N}\omega_i\cdot\mu_i=\frac{\theta_V}{s_V}\text{ with }s_V=\frac{\sum_{i\in N}P_i^V\,V_i}{\sum_{i\in N}P_i\,Y_i}$$

To take this expression to the data, we approximate total variable input expenditures ($\sum_{i\in N}P_i^V\,V_i$) with total costs of goods sold, and total output ($\sum_{i\in N}P_i\,Y_i$) with total sales, both expressions at the 6-digit industry level. Importantly, total sales and total cost of goods sold include the value of firms' exports and imports, respectively. As a result, markup variation in our analysis reflects not only changes in markups on domestic sales but also changes in markups on exported goods and services.[2] For further validation, Figure C1 in Appendix C presents an alternative markup measure that uses total cost of goods sold plus administrative expenditures (administrative payroll) as the measure of variable input costs. This allows us to assess the sensitivity of our results to the measurement of variable input expenditures.

We use output elasticities estimated by De Loecker & Eeckhout (2020) at the 2-digit industry level for the US, implicitly assuming similar production technologies in these two countries. Our baseline specification uses time-invariant elasticities. As robustness checks, Appendix C reports markups using two alternative measures of output elasticities. First, we use the time-varying elasticities from De Loecker & Eeckhout (2020) (Figure C2). Second, following Eslava et al. (2025), we construct industry-specific output elasticities for Mexico using average input cost shares, assuming perfectly competitive input markets, constant returns to scale, and a common Cobb-Douglas production technology within each two-digit sector (Figure C3).[3] Although both alternatives yield slightly lower markup levels, the overall patterns remain unchanged.

We use the production function estimates from De Loecker & Eeckhout (2020) as our baseline because they do not rely on the strong assumptions required by the cost-share approach. Inferring output elasticities from cost shares assumes perfectly competitive factor markets and constant returns to scale, whereas production function estimation remains valid even when firms exercise labor market power. Finally, after constructing markups, we exclude six-digit industries with estimated markups above 500 percent, which we treat as unreliable observations.

Herfindahl-Hirschman Index. To understand markup dynamics, we measure product market concentration at the 6-digit industry level using the Herfindahl–Hirschman Index (HHI):

$$HHI^P=\sum_{i\in N}s_i^2$$

where s_i is the market share of firm i in total sales of a given 6-digit industry with N firms. The HHI ranges from 0 to 1, increasing with market concentration.[4]

[2] The main challenge of not being able to distinguish markups on domestic sales from those on exports is that higher markups do not necessarily reflect weaker domestic competition. Instead, the rise could be driven entirely by higher markups on export sales, while markups on domestic sales remain unchanged or even decline. This mechanism is particularly important for manufacturing industries that have a higher integration into global value chains.

[3] Following Eslava et al. (2025), this measure computes production costs as the sum of labor payroll, expenditure on intermediate inputs, and the cost of capital services, where the latter is imputed from the book value of fixed assets assuming a rental rate and a depreciation rate of capital of 5 percent each.

[4] A limitation of our data is that some establishments (production units within a firm) do not report firm identifiers, which are necessary to compute market shares. As a result, although the denominator of the HHI includes total industry sales, the shares of establishments without firm identifier are excluded from the numerator, leading to an understatement of true concentration. However, this bias is likely small as establishments with missing firm identifier represent less than 1 percent of total sales in 6-digit industries.

Rather than using firms' total sales shares, we compute an adjusted market share that accounts for international trade. Specifically, we subtract each firm's exports from the numerator and adjust total industry sales in the denominator by net exports, yielding:

$$s_i = \frac{sales_i - exports_i}{\sum_{i \in N} sales + (imports_i - exports_i)}$$

This adjustment measures each firm's share of domestic market sales, providing a more accurate measure of competitive conditions within Mexico by accounting for the effects of exports and import competition.

Labor market concentration is computed at the municipality m and 6-digit industry level using employment. As argued by Alviarez et al. (2025), the relevant labor market is often smaller than product markets as job opportunities are not only determined by skills and occupation, but also by geographical location.

$$HHI_m^L = \sum_{i \in N} s_{im}^2$$

However, because our analysis is conducted at the 6-digit industry level, we further aggregate labor market concentration from municipalities to the national level using cost weights, yielding:

$$HHI^L = \sum_{m \in M} \omega_m \cdot HHI_m^L \text{ with } \omega_m = \frac{COGS_m}{\sum_{m \in M} COGS_m}$$

One limitation of this measure is that labor market concentration is sensitive to the definition of the relevant geographic market. Using municipalities may overstate concentration in areas with substantial cross-municipality commuting, where workers effectively face a broader set of employment opportunities.

Other Economic Outcomes. To assess aggregate implications, we use TFP growth at the 3-digit industry level computed by INEGI based on the KLEMS methodology, which decomposes output growth into contributions from capital, labor, energy, materials, and services. Given that TFP is reported annually, we aggregate growth over each intercensal period to match the timing of markup changes. Similarly, markups are aggregated from 6-digit to 3-digit industry level using cost weights to match TFP data. Using establishment-level data on total sales, payroll, and capital stock from the Economic Census, we also compute changes in the marginal revenue products of labor (MRPL) and capital (MRPK). Finally, capital investment and exports are measured using capital expenditures and foreign sales at the 6-digit industry level from the Economic Census.

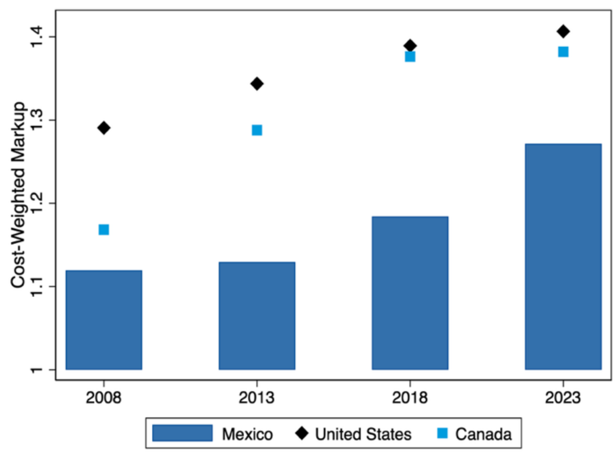
III. Markup Trends in Mexican Industries

Figure 1 plots national-level markup estimates over the period of analysis. The results show a substantial increase in markups in Mexico: average price markups over marginal costs more than doubled between 2008 and 2023, rising from 12 percent to 27 percent. To place these findings in context, we compare them with estimates for the United States and Canada[5] and find that the upward trend for Mexico mirrors that observed in

[5] Estimates for the United States and Canada are constructed using information from Orbis database that covers both private and public companies worldwide. Small and medium enterprises have limited representation in this source. Therefore, differences in levels between Canada and US, and Mexico, should be interpreted cautiously as the Mexican Economic Census has a higher coverage.

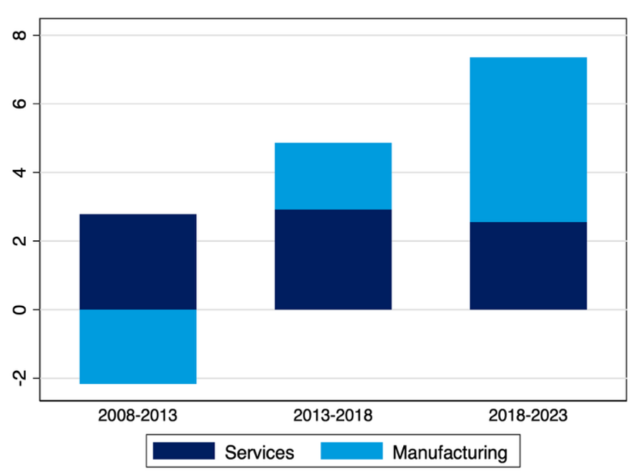
these advanced economies. Our estimates are somewhat below Alviarez et al. (2025), who report average markups of roughly 30 percent for Mexico during the period 2009-2021. Their higher levels, however, reflect the use of sales-weighted markups, which place greater weight on large, high-markup firms, and the narrower focus on manufacturing firms.

Figure 1: Price Markups over Marginal Cost, 2008-2023



Source: INEGI, Orbis, and authors' calculations. Note: Estimates for the United States and Canada are constructed using the Orbis database, which covers private and public companies worldwide but is skewed toward larger firms. The Mexican Economic Census, by contrast, is a complete enumeration of all economic units in the country. Because of this substantially broader coverage on the Mexican side, differences in levels between Mexico and the United States and Canada should be interpreted with caution.

Figure 2: Markup Growth Sectorial Contributions, 2008-2023 (In percent)



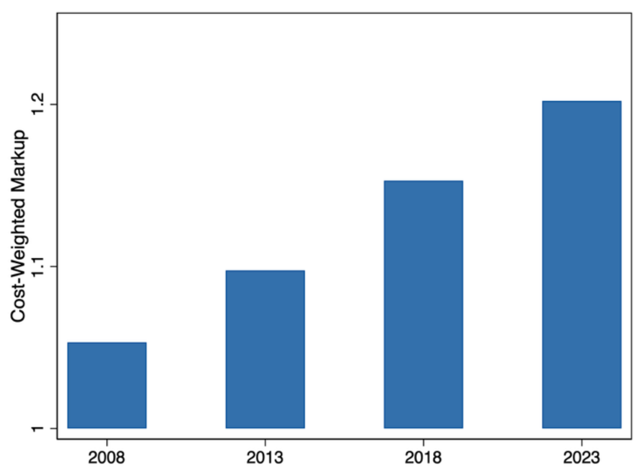
Source: INEGI, and authors' calculations.

We further decompose markup growth by broad economic sectors to identify its underlying sources. Figure 2 shows that the sources of markup growth have gradually shifted from services in the first decade to manufacturing in the last five-year period. In particular, the negative contribution of manufacturing markups during 2008-2013 coincides with the adverse effects of the global financial crisis. The collapse in US demand led to a sharp decline in export revenues and FDI inflows, which disproportionately affected Mexican manufacturing industries that are deeply integrated into global value chains (Bergin et al., 2009; Moreno-Brid & Padilla-Pérez, 2012).

Services. Figure 3 reports the evolution of aggregate markups in services, while Figures 4 and 5 decompose this increase by broad service industries and by the respective roles of within-industry growth, reallocation toward higher-markup service industries, and their interaction. The interaction term captures whether these two forces reinforce or offset one another, that is, whether the industries gaining share are also the ones whose markups are rising fastest within the same period or vice versa. Appendix D provides the details of the decomposition.

Markups in services increased from 5 percent in 2008 to 20 percent in 2023. This increase was driven mainly by wholesale and retail trade, particularly retail trade in supermarkets (Figure 4; Table A1). Figure 5 further illustrates that during 2008-2013, the contribution of wholesale and retail trade reflected both reallocation toward high-markup industries and higher markups within 6-digit industries. Over the subsequent decade, however, markup growth was driven almost entirely by increases within 6-digit industries rather than by further reallocation. The interaction term is large and negative in both 2008–2013 and 2013–2018, offsetting much of the combined within and reallocation effects. This indicates that industries expanding their share tended to exhibit more modest markup growth, while the largest markup increases occurred in industries whose relative share was declining.

Figure 3: Price Markups over Marginal Cost in Services Industries, 2008-2023



Source: INEGI, Orbis, and authors' calculations.

The reallocation toward wholesale and retail trade during the first period (2008–2013) is closely linked to structural changes in the sector. This period coincides with the large-scale entry and expansion of international retail chains. Between 2000 and 2012, foreign affiliate sales of the 250 largest global retailers grew by more than 400 percent, reaching US$1 trillion, with much of this expansion occurring in developing economies (Atkin et al., 2018). In Mexico, the signing of NAFTA in 1994 accelerated the expansion of multinational supermarket chains

(Chavez, 2002). As documented by Atkin et al. (2018), the number of foreign supermarkets in Mexico increased nearly fourfold, from 365 stores in January 2002 to 1,335 in March 2014. For example, Walmart de México (Walmex) and its affiliated brands rapidly expanded across the country over the past decades, becoming the leading company in the sector and the largest private employer in Mexico (Atkin et al., 2018).

Figure 4: Growth Contribution of Service Industries (In percent)

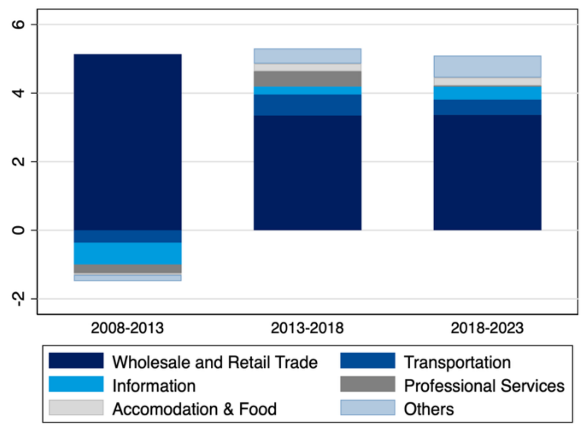
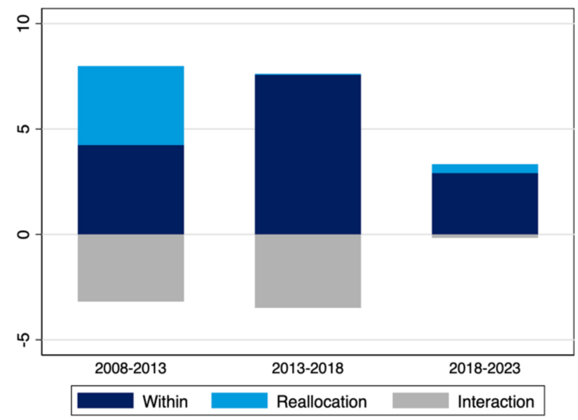


Figure 5: Growth Contribution Within and Across Service Industries (In percent)



Source: INEGI, and authors' calculations.
Note: Appendix D provides details of Figure 5 decomposition.

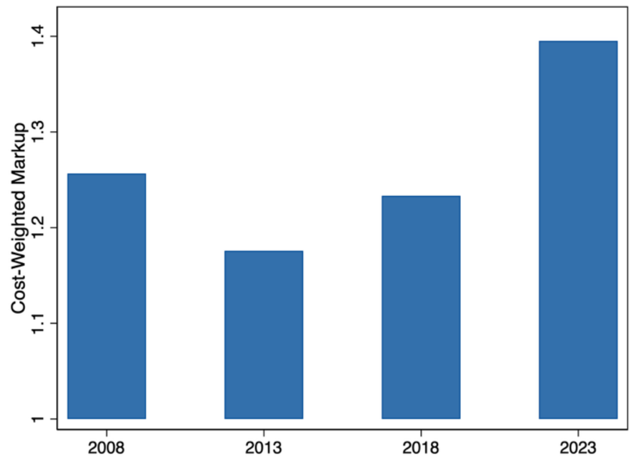
Beyond their growing market share, large retail chains are also able to sustain relatively high, and in some cases increasing markups, as observed during 2013–2023. One reason is that these firms operate with lower marginal costs than smaller retailers, and these lower costs are often not fully passed on to consumers. Large retailers benefit from economies of scale in purchasing, distribution, accounting, and logistics (Biles, 2006), while also exerting monopsony power in local labor markets and bargaining power over suppliers, further lowering input costs (Atkin et al., 2018; Biles, 2006). In addition, these firms may charge higher prices by offering greater product variety, higher perceived quality, and store amenities, such as improved hygiene, security, accessibility, and product presentation, that raise consumers' willingness to pay (Atkin et al., 2018). Similarly, the 2008–2023 period also coincided with the rapid expansion of online marketplaces. By 2025, e-commerce accounted for 15 percent of total retail sales in Mexico.[6] To the extent that these technologies improved convenience and delivery speed, the increase in markups among large retailers may reflect both greater operational efficiency and greater market power in input markets.

Manufacturing. Figures 6, 7, and 8 present similar facts for the manufacturing sector. After declining between 2008 and 2013, manufacturing markups increased substantially, rising from 17 percent in 2013 to 40 percent in 2023. Transportation equipment is the main contributor to the increase in manufacturing markups over the past decade, while consumer goods, petrochemical industries, and IT equipment have also played an increasingly important role in the last five years (Figure 7). At a more disaggregated level, the automobile manufacturing industry is the largest contributor, followed by heavy-dutfy truck manufacturing (Table A2). Regarding the within,

[6] See "Insights into the Mexican E-Commerce Competition Landscape" published by the Center for Strategic and International Studies: https://www.csis.org/analysis/insights-mexican-e-commerce-competition-landscape.

reallocation, and interaction components, all the growth during the period of analysis is driven by within-industry growth in manufacturing (Figure 8).

Figure 6: Price Markups over Marginal Cost Manufacturing Industries, 2008-2023



Source: INEGI, Orbis, and authors' calculations.

Figure 7: Growth Contribution Manufacturing Industries (In percent)

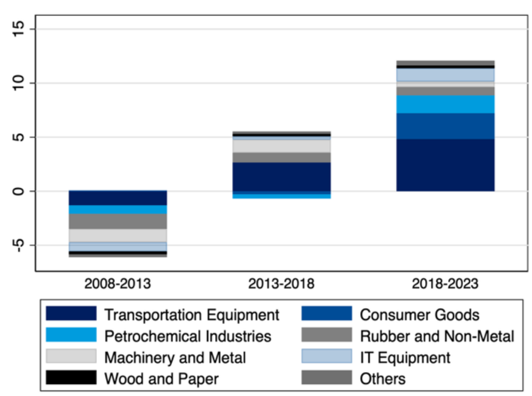
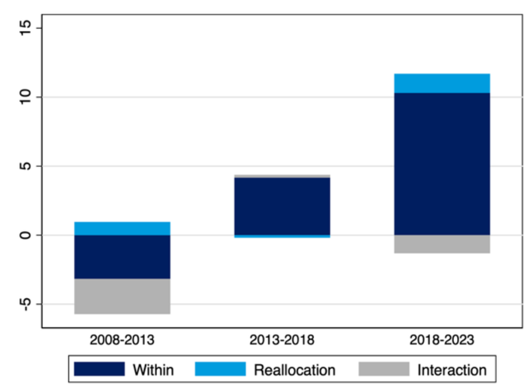


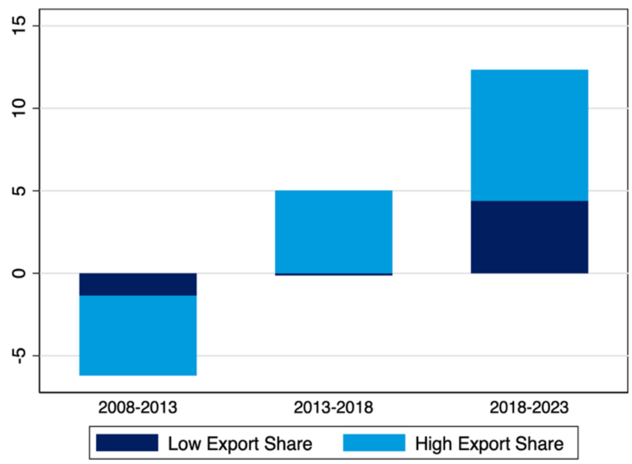
Figure 8: Growth Contribution Within and Across Manufacturing Industries (In percent)



Source: INEGI, and authors' calculations.

A common feature among industries with rising markups in manufacturing is their higher integration into global value chains. Figure 9 shows that markup growth has been concentrated in export-oriented industries. We classify six-digit manufacturing industries based on whether their export share in 2008 was above or below the median. Industries with higher initial export shares account for nearly all the increase in markups between 2013 and 2023, while those with lower export shares exhibit smaller changes. This pattern is consistent with evidence showing higher markups among exporters following trade liberalization. For instance, Brugués et al. (2025) show that while liberalization in Mexico reduced domestic prices through increased competition and cheaper inputs, competitive advantages in foreign markets allowed producers to raise markups of exported goods. In particular, Mexico's comparative advantage stems, among others, from relatively low labor costs, geographical proximity to the United States, trade agreements, and increasing foreign direct investments (FDI).

Figure 9: Markup Growth by Export Share, 2008-2023 (In percent)



Source: INEGI, and authors' calculations.
Note: We classify six-digit manufacturing industries based on whether their export share in 2008 was above (high) or below the median (low).

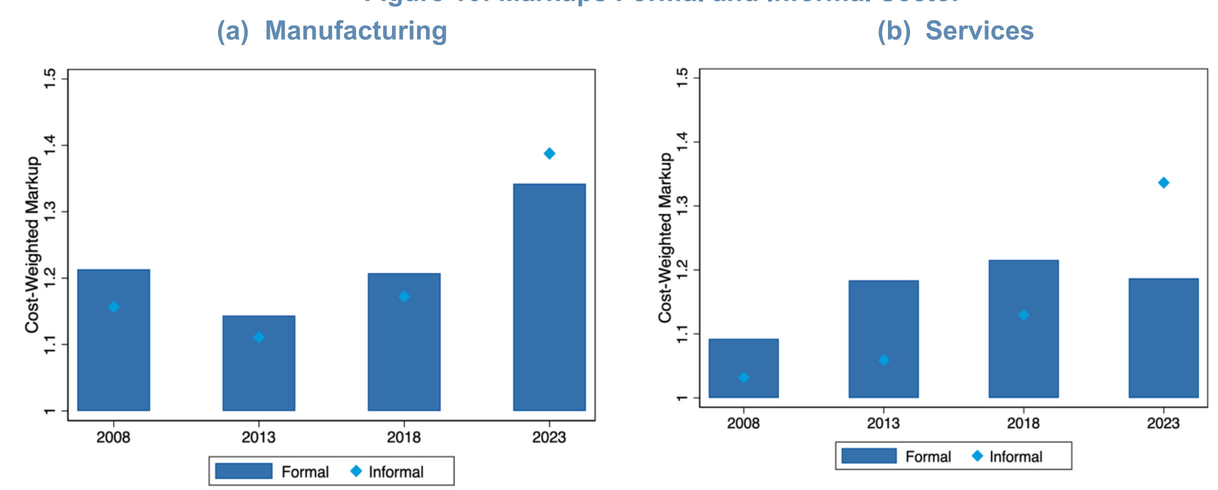
The transportation equipment industry in Mexico provides the clearest example of this pattern of rising markups, alongside high integration into global value chains. Over the past decades, Mexico has become one of the leading automotive producers worldwide, ranking as the largest producer in Latin America and among the top exporters globally (Covarrubias & Ramirez, 2020). Following the implementation of NAFTA, light-vehicle production more than tripled, supported by major multinational automakers such as Chrysler, Ford, General Motors, Nissan, and Volkswagen (Klier & Rubenstein, 2017). The maquiladora program further facilitated integration into North American production networks by allowing firms to assemble imported components into exportable goods (Chiquiar & Tobal, 2019). Crucially, integration into global markets stimulated substantial investment, with assembly plants adopting technologies comparable to those used in the United States and Canada (Klier & Rubenstein, 2017; Ruiz, 2017). Moreover, firms in this industry benefit from well-developed logistics and supplier networks along the northern border, which reduce transportation and coordination costs and reinforce Mexico's cost competitiveness as an export platform (Covarrubias & Ramírez, 2020).

Similarly, while transportation equipment remains a key contributor, other industries, such as IT equipment, petrochemicals, and consumer goods, have gained importance in recent years as global value chains have been reallocated. This shift has been partly driven by US-China trade tensions, which reduced direct US sourcing from China and increased imports from nearshoring alternatives (Alfaro & Chor, 2023). Mexico has been one of the main beneficiaries of this shift, as its role as a relatively low-cost manufacturing location and proximity to the US market have allowed it to capture market share previously held by Chinese imports in the US market. As shown by Arizala et al. (2025), Mexico became the largest US trading partner in 2023, accounting for 15.4 percent of total US imports. In particular, declines in China's share of US imports between 2017 and 2023 are systematically associated with gains in Mexico's import share across several product categories (Arizala et al., 2025; Alfaro & Chor, 2023).

For instance, in the IT equipment industry, Mexico has exploited its upstream advantages as a supplier of raw materials (e.g. Lithium) that are essential to produce advanced electronic products such as smartphones (Gereffi, 2025). Similarly, multinational firms manufacturing consumer goods have increasingly relocated production to Mexico to supply both domestic and regional markets. For example, Unilever announced a major investment in 2021 to expand production capacity in Mexico and increase exports to the United States, Canada, the Caribbean, Central and South America, and parts of Europe.[7] As export-oriented production expands under these favorable cost and logistical conditions, and with reduced competition from China in the US market, firms in these industries may be able to increase or sustain high markups.

Formal and Informal Sector. Figure 10 reports markups for formal and informal establishments in manufacturing and services. Informal establishments, defined as those that do not contribute to social security, consistently exhibited lower markups than formal firms throughout most of the sample period. This pattern is consistent with informal firms being smaller and lacking the economies of scale, supplier bargaining power, and market share that enable formal firms to sustain higher markups. The gap was particularly large in services during 2008-2018, a period in which the expansion of large formal retail chains likely contributed to rising markups and widened the advantage of supermarkets over small informal retailers.

Figure 10: Markups Formal and Informal Sector



Source: INEGI, and authors' calculations.

This pattern reverses in 2023, particularly in services, as formal-sector markups decline while informal-sector markups continue to rise. This divergence coincides with labor market reforms that disproportionately increased labor costs for formal firms, including substantial minimum wage increases since 2019 and the 2021 outsourcing ban, which required firms to directly employ workers previously hired through third-party arrangements (Campos-Vazquez & Esquivel, 2023; Estefan et al., 2024). These reforms likely reduced formal firms' ability to exercise labor market power, contributing to the observed decline in markups and potentially affecting more labor-intensive firms in the services sector.

[7]See: https://siila.com.mx/news/unilever-invest-us-275-million-four-plants-mexico/5093/lang/en

IV. The Role of Product and Labor Market Concentration

This section studies the relationship between markups and market concentration to shed light on the drivers of markups. Markups and market concentration are both equilibrium outcomes shaped by firm behavior, competitive conditions, and structural features of the economy. Although concentration does not mechanically determine changes in markups, their joint behavior can provide insights into the sources of markup changes. In particular, increases in markups that coincide with higher product market concentration are consistent with firms exerting greater monopoly or oligopoly power, whereas increases in markups associated with higher input or labor market concentration may reflect monopsony or oligopsony power.

Building on existing models that relate markups to concentration measures (e.g., Hendricks & McAfee, 2010), we first present a simple theoretical framework that models a market where firms may exert market power both when selling output and when purchasing inputs.

Setup. Consider a market with N firms indexed by i producing differentiated goods Y_i with variable input X_i, and the following production function:

$$Y_i = A_i X_i^{\gamma}$$

Firms choose output and input usage to maximize profits subject to demand for their products and supply for their inputs. In particular, the optimization problem is defined as:

$$\Pi_i = \underset{Y_i, X_i}{\text{Max}} \ \{P_i Y_i - P_i^X X_i\}$$

Subject to nested-CES product demand:

$$P_i = \left(\frac{Y_i}{Y}\right)^{-\frac{1}{\sigma_w}} Y^{-\frac{1}{\sigma_m}} \ \text{ with } Y = \left(\sum_{i \in N} Y_i^{\frac{\sigma_w - 1}{\sigma_w}}\right)^{\frac{\sigma_w}{\sigma_w - 1}}$$

And input supply:

$$P_i^X = \left(\frac{X_i}{X}\right)^{\frac{1}{\epsilon_w}} X^{\frac{1}{\epsilon_m}} \ \text{ with } X = \left(\sum_{i \in N} X_i^{\frac{\epsilon_w + 1}{\epsilon_w}}\right)^{\frac{\epsilon_w}{\epsilon_w + 1}}$$

where Y and X are bundles over products and inputs in the same markets, respectively. Moreover, σ_w and σ_m are demand elasticities of substitution within and across product markets, and similarly, ϵ_w and ϵ_m are supply elasticities of substitution within and across input markets.

Equilibrium. Solving the firms' first order conditions, we get the optimal condition for firms in this market:

$$P_i\left(1 - \left(s_i^Y \cdot \frac{1}{\sigma_m} + (1 - s_i^Y) \cdot \frac{1}{\sigma_w}\right)\right) = MC_i\left(1 + \left(s_i^X \cdot \frac{1}{\epsilon_m} + (1 - s_i^X) \cdot \frac{1}{\epsilon_w}\right)\right)$$

where s_i^Y and s_i^X are the firm i's sales and inputs shares, respectively, and MC_i refers to the marginal cost. Note that the appropriate definition of marginal cost in this model is:

$$MC_i = \frac{\partial X_i}{\partial Y_i} P_i^X = \frac{1}{\gamma} \cdot \frac{P_i^X X_i}{Y_i}$$

Rearranging and aggregating yields:

$$\sum_{i\in N}\omega_i\cdot\frac{P_i}{MC_i}=\frac{\left(1+\left(HHI^X\cdot\frac{1}{\epsilon_m}+(1-HHI^X)\cdot\frac{1}{\epsilon_w}\right)\right)}{\left(1-\left(HHI^Y\cdot\frac{1}{\sigma_m}+(1-HHI^Y)\cdot\frac{1}{\sigma_w}\right)\right)}$$

where $\sum_{i\in N}\omega_i\cdot\frac{P_i}{MC_i}$ is the cost-weighted markup with $\omega_i=\frac{MC_iY_i}{\sum_{i\in N}MC_iY_i}$.

Hence, the cost-weighted average markup is a function of product and input market concentration measures (HHI^Y and HHI^X), and four demand and supply elasticities ($\sigma_w, \sigma_m, \epsilon_w, \epsilon_m$).

Proposition. Assuming $\epsilon_w > \epsilon_m$ and $\sigma_w > \sigma_m$[8], increases in average markups can arise from:

1. Higher product or input market concentration.
2. Lower elasticities of substitution.

Empirical results. While elasticities are not directly observed, we observe 6-digit industry market concentration measures that allow us to take the former proposition to the data. Product market concentration is proxied by HHI^P, and labor market concentration by HHI^L, as described in Section II.

We estimate correlations between markups and market concentration measures in first differences to abstract from permanent industry structural characteristics, such as technology and demand-side features, that cause some industries to permanently exhibit high markups and high concentration. In particular, this approach focuses on within-industry changes over time, asking whether industries with higher markup growth also experienced greater increases in concentration. Formally, we estimate:

$$\Delta Ln(Markup)_{jt}=\alpha+\beta\cdot\Delta HHI_{jt}+\gamma_t+\epsilon_{jt} \qquad (1)$$

where changes are computed over 5-year intercensal periods, γ_t are year fixed effects, and standard errors are clustered at the 6-digit industry level j. While first differences absorb time-invariant industry characteristics, year fixed effects control for common macroeconomic shocks.

Product Market Concentration. Table 1 examines the relationship between markups and product market concentration using the full sample of 6-digit industries, and results are reported separately for manufacturing and services industries. We find no systematic correlation between these two variables in services or manufacturing industries. This result suggests that increases in market power during our sample period were not primarily driven by greater concentration in product markets.

Labor Market Concentration. To study the role of input market power, Table 2 examines the joint behavior of markups and labor market concentration for the full sample of industries and separately for manufacturing and services. We find a positive correlation between markups and labor market concentration in services, while no significant relationship is observed for manufacturing. Moving from a fully competitive labor market to a single employer within a municipality and 6-digit industry is associated with an increase in markups of approximately 15 percent.

[8] This ordering is standard in nested-CES demand and supply systems and reflects the idea that substitution is easier the more similar are the alternatives available to buyers or sellers. On the demand side, products within the same narrowly defined market (e.g., competing brands of the same good) are closer substitutes to consumers than products across different markets (e.g., substituting toward an entirely different good category), so the within-market elasticity of substitution is naturally larger than the across-market elasticity. The same logic applies symmetrically on the supply side: workers (or other inputs) can more easily reallocate across firms within the same local labor market and occupation than across different markets or sectors.

These findings suggest that monopsony power is a driver of markup growth in services in Mexico. In particular, when employers have greater wage-setting power due to higher labor market concentration, they are able to pay wages below workers' marginal productivity, reducing labor costs and increasing markups (Berry et al., 2019). Empirical studies for Mexico support this mechanism. For instance, Cazzuffi et al. (2023) show that higher local labor market concentration is associated with lower wages for both skilled and unskilled workers in the country's services sector. Similarly, in line with the contribution of retail trade in supermarkets to markup growth, existing studies for the United States and Mexico show that the expansion of shopping supercenters increases local labor market concentration, while lowering wages and employment (Basker, 2005; Bonanno & Lopez, 2012; Wiltshire, 2025; Atkin et al., 2018).

Table 1: Markups and Product Market Concentration

	(1) ΔLn(Markup) All	(2) ΔLn(Markup) Manufacturing	(3) ΔLn(Markup) Services
ΔHHI Sales	0.041	0.052	0.045
	(0.077)	(0.084)	(0.119)
Constant	0.054***	0.024***	0.073***
	(0.003)	(0.004)	(0.005)
Observations	1,868	737	1,131
R-squared	0.109	0.240	0.063
Year FE	Y	Y	Y

Note: Industry-level OLS regressions of five-year markup changes on five-year HHI changes. Standard errors are clustered at the 6-digit industry level. *** p<0.01, ** p<0.05, * p<0.1.

Table 2: Markups and Labor Market Concentration

	(1) ΔLn(Markup) All	(2) ΔLn(Markup) Manufacturing	(3) ΔLn(Markup) Services
ΔHHI Employment	0.100**	-0.004	0.150**
	(0.042)	(0.033)	(0.060)
Constant	0.053***	0.025***	0.072***
	(0.003)	(0.004)	(0.005)
Observations	1,868	737	1,131
R-squared	0.116	0.240	0.079
Year FE	Y	Y	Y

Note: Industry-level OLS regressions of five-year markup changes on five-year HHI changes. Standard errors are clustered at the 6-digit industry level. *** p<0.01, ** p<0.05, * p<0.1.

Fixed Costs. Market concentration is only one of several non-mutually exclusive drivers of market power discussed in the literature (Berry et al., 2019). An alternative explanation for rising markups is an increase in fixed costs. Investments in information technology, product quality, and distribution or logistics networks raise fixed and sunk costs, requiring firms to sustain higher markups over marginal cost to recover these investments. Under this view, markup growth need not reflect weaker competition and may instead accompany higher investment and productivity.

Table 3 provides a first assessment of this mechanism by regressing changes in markups on capital expenditures using the specification in equation (1). We find no significant relationship in services, consistent with the role of labor market power documented above. In manufacturing, however, the relationship is positive and statistically significant, suggesting that higher fixed costs potentially contributed to markup growth. Given the prominent role of export-oriented industries in driving manufacturing markups, this result is also consistent with evidence that firms increase investment and upgrade product quality in preparation for entering or expanding into export markets (Iacovone & Javorcik, 2012).

Taken together, these results suggest that the sources of rising markups differ across sectors. In services, higher markups are associated with greater labor market concentration, whereas in manufacturing they are associated with higher capital expenditures. By contrast, we find no evidence that changes in product market concentration correlate with the rise in markups during our sample period. These results should be interpreted as a first step toward understanding the drivers of markup growth rather than as a comprehensive causal analysis. The objective of this section is to provide suggestive evidence on leading explanations that can guide future research on the determinants of market power in Mexico.

Table 3: Markups and Capital Expenditures

	(1) ΔLn(Markup) All	(2) ΔLn(Markup) Manufacturing	(3) ΔLn(Markup) Services
Capital expenditures	0.005	0.019***	-0.012
	(0.013)	(0.004)	(0.033)
Constant	0.056***	0.025***	0.076***
	(0.003)	(0.004)	(0.005)
Observations	1,977	762	1,215
R-squared	0.107	0.230	0.066
Year FE	Y	Y	Y

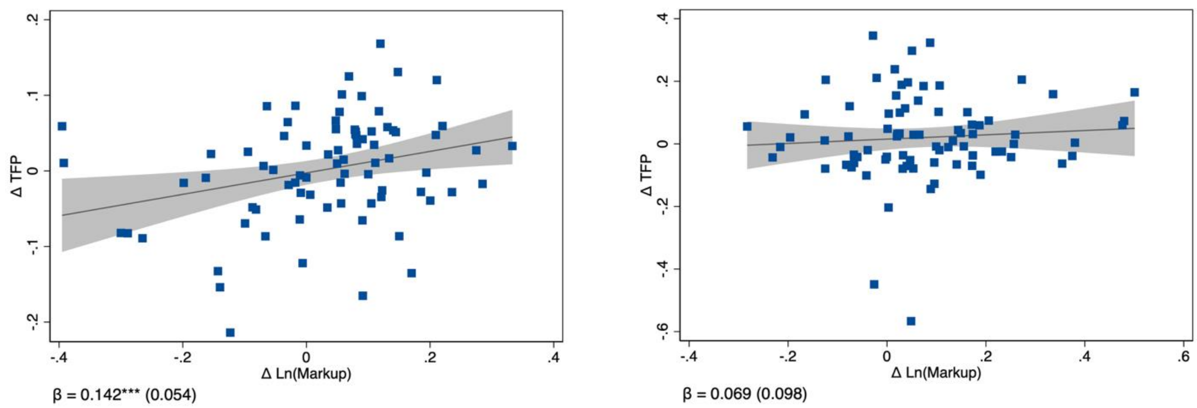
Note: Industry-level OLS regressions of five-year markup changes on capital expenditures, which proxies for changes in capital during the intercensal period.
Standard errors are clustered at the 6-digit industry level. *** p<0.01, ** p<0.05, * p<0.1.

V. Aggregate Efficiency Implications

Changes in markups and market concentration can have different aggregate efficiency implications. On the one hand, rising markups may reflect the expansion of highly productive firms that invest, innovate, and achieve scale economies (Autor et al., 2020). On the other hand, they may arise from increased barriers to entry or weaker competitive pressures, allowing dominant firms to sustain high prices without improvements in productivity or investment (Covarrubias et al., 2020). This section sheds light on the aggregate efficiency implications of rising markups in Mexico by examining their relation with total factor productivity (TFP) and the marginal revenue products of capital and labor.

Figure 11: Changes in Markup and Total Factor Productivity Growth (2008-2023)

(a) Manufacturing **(b) Services**



Source: INEGI, and authors' calculations. Note: Each dot corresponds to five-year changes. Ninety five percent confidence intervals plotted. Standard errors in parentheses.

Figure 11 plots the correlation between changes in markups and TFP growth over 2008-23, with each dot corresponding to five-year changes. TFP growth at the 3-digit industry level is estimated by INEGI via growth accounting using the KLEMS framework.[9] A positive and statistically significant correlation is apparent for manufacturing industries, while no clear relationship is observed for services. In manufacturing, this pattern is consistent with more productive firms expanding into export markets while undertaking capital investments that raise fixed costs and sustain higher markups (De Loecker & Warzynski, 2012; Iacovone & Javorcik, 2012). By contrast, in services, higher markups appear less tied to increasing productivity. As noted by Alviarez et al. (2025), markups in many service industries reflect weaker competitive pressures rather than efficiency gains, allowing dominant firms to sustain higher margins without corresponding increases in capital expenditures or productivity growth. As documented in Section IV, these weaker competitive pressures in services likely arise from monopsony power.

To further assess the efficiency implications of rising markups, we relate markup changes to changes in the marginal revenue products of capital and labor. Under a Cobb-Douglas production function with constant output elasticities, changes in MRPK and MRPL are proportional to changes in the revenue-to-capital and revenue-to-payroll ratios, respectively. Tables 4 and 5 show that markup growth in manufacturing is positively associated with increases in MRPK, whereas in services it is negatively associated with changes in MRPL. These findings reinforce the evidence from TFP, suggesting that rising markups in manufacturing are linked to productive investment, while those in services are more closely associated with labor market power.

[9] The KLEMS model defines the production function using five inputs: capital, labor, energy, materials, and services.

Table 4: Changes in Markups and Marginal Revenue Productivity of Capital (2008-2023)

	(1) ΔLn(MRPK) All	(2) ΔLn(MRPK) Manufacturing	(3) ΔLn(MRPK) Services
ΔLn(Markup)	0.016	0.040**	0.011
	(0.011)	(0.020)	(0.012)
Constant	0.056***	0.023***	0.075***
	(0.003)	(0.004)	(0.005)
Observations	1,977	762	1,215
R-squared	0.110	0.239	0.067
Year FE	Y	Y	Y

Note: Industry-level OLS regressions of five-year MRPK changes on markup changes. Standard errors are clustered at the 6-digit industry level. *** p<0.01, ** p<0.05, * p<0.1.

Table 5: Changes in Markups and Marginal Revenue Productivity of Labor (2008-2023)

	(1) ΔLn(MRPL) All	(2) ΔLn(MRPL) Manufacturing	(3) ΔLn(MRPL) Services
ΔLn(Markup)	-0.048***	-0.020	-0.057***
	(0.016)	(0.019)	(0.021)
Constant	0.052***	0.023***	0.072***
	(0.004)	(0.004)	(0.005)
Observations	1,977	762	1,215
R-squared	0.120	0.231	0.085
Year FE	Y	Y	Y

Note: Industry-level OLS regressions of five-year MRPL changes on markup changes. Standard errors are clustered at the 6-digit industry level. *** p<0.01, ** p<0.05, * p<0.1.

VI. Conclusions

This paper studies the evolution of market power in Mexican industries and provides new evidence on its drivers and aggregate efficiency implications. We document a substantial increase in price markups over the period of analysis (2008-23), driven by services industries between 2008 and 2018 and by manufacturing industries more recently. We also find important differences between formal and informal establishments, as markups of formal firms exceeded those of informal firms throughout the period, with one exception—in 2023, markups of informal firms surpassed those of formal firms, a reversal that is particularly pronounced in services.. More broadly, our results also show that aggregate trends mask important heterogeneity across sectors. In manufacturing, markup growth—closely associated with higher capital expenditures—coincides with productivity growth. In contrast, in services, rising markups—linked to higher local labor market concentration—are associated with stagnant productivity.

These findings are consistent with recent evidence highlighting differences in competition across sectors in Latin America. As noted by Alviarez et al. (2025), manufacturing firms often face strong competitive pressure from national and international markets, which encourages productivity improvements. By contrast, many service providers operate in more local markets where competitive pressure is weaker, reducing incentives to raise productivity or pass cost savings on to consumers. Moreover, our findings for the service sector align with evidence of substantial labor market power in the region. Amodio et al. (2024) estimate that workers in Latin America receive, on average, about 42 percent of the value they produce. Similarly, Eslava et al. (2025) find that workers capture roughly 54 cents of each dollar of output.

Taken together, these findings indicate that growing markups in Mexico mask very different drivers over time, with materially different implications for aggregate efficiency. A deep understanding of these drivers is of the essence for a proper policy design.

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VIII. Appendix A. Supporting Tables

Table A1: Top 5 Growth Contribution Services, 2008-2023
(In percent)

6-digit Industry	Growth Contribution	Cost Share 2008
Retail trade in supermarkets	0,7	8,2
New automobiles retail trade	0,5	3,9
Retail trade in grocery and convenience stores	0,5	2,5
Dairy products wholesale trade	0,4	1,5
Furniture and computer	0,4	1,8
Total Top 5	2,5	18,0
Total Services	12,7	100

Source: INEGI, and authors' calculations.

Table A2: Top 5 Growth Contribution Manufacturing, 2008-2023
(In percent)

6-digit Industry	Growth Contribution	Cost Share 2008
Automobile manufacturing	2,0	10,0
Heavy duty truck manufacturing	1,1	2,3
Snack food manufacturing	0,7	1,1
Milk manufacturing	0,5	1,6
Animal food manufacturing	0,5	2,0
Total Top 5	4,8	17,0
Total Manufacturing	11,0	100

Source: INEGI, and authors' calculations.

IX. Appendix B. Industry-Level Markup Estimator

Proposition. The industry-level marginal cost-weighted markup ($\sum_{i \in N} \omega_i \cdot \mu_i$) is equal to the industry-level ratio estimator $\left(\frac{\theta_V}{s_V}\right)$.

Proof. Define marginal costs and total costs of goods sold as MC_i and $MC_i Y_i$, respectively. Then, note that:

$$\sum_{i \in N} \omega_i \cdot \mu_i = \sum_{i \in N} \frac{MC_i Y_i}{\sum_{i \in j} MC_i Y_i} \cdot \frac{P_i}{MC_i} = \frac{\sum_{i \in N} P_i Y_i}{\sum_{i \in N} MC_i Y_i} \quad (1)$$

Second, at the optimum, marginal costs should be equalized across all production factors. Thus, for an arbitrary input factor V_i with price P_i^V and production function input elasticity θ_{V_i}, we have:

$$MC_i = P_i^V \cdot \frac{\partial V_i}{\partial Y_i} = P_i^V \cdot \frac{V_i}{Y_i} \cdot \frac{\partial Ln(V_i)}{\partial Ln(Y_i)} = P_i^V \cdot \frac{V_i}{Y_i} \cdot \frac{1}{\theta_{V_i}} \quad (2)$$

Replacing (2) in (1), we get:

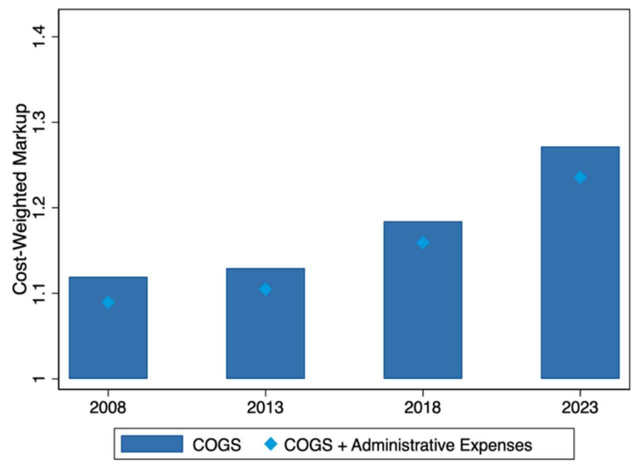
$$\frac{\sum_{i \in N} P_i Y_i}{\sum_{i \in N} MC_i Y_i} = \frac{\sum_{i \in N} P_i Y_i}{\sum_{i \in N} P_i^V V_i} \theta_{V_i} = \frac{\theta_{V_i}}{s_V} \ with \ s_V = \frac{\sum_{i \in N} P_i^V V_i}{\sum_{i \in N} P_i Y_i} \quad (3)$$

Combining (3) and (1), and assuming that firm-level output elasticities are common within industry j ($\theta_V = \theta_{V_i}$), we have:

$$\sum_{i \in N} \omega_i \cdot \mu_i = \frac{\theta_V}{s_V} \text{ with } s_V = \frac{\sum_{i \in N} P_i^V V_i}{\sum_{i \in N} P_i Y_i}$$

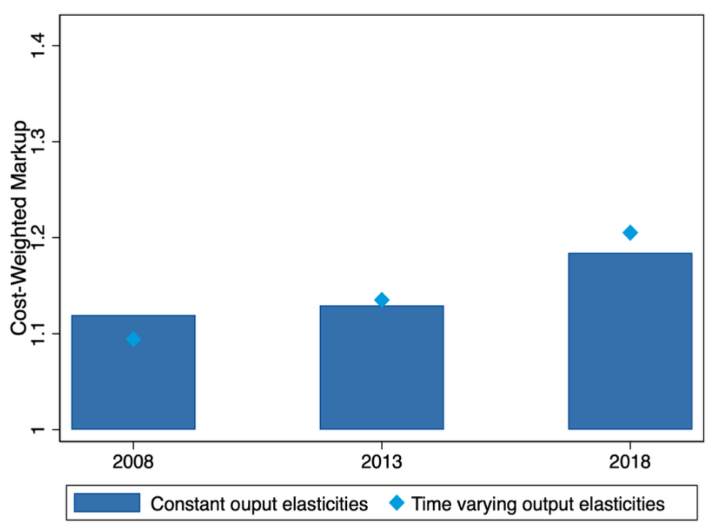
X. Appendix C. Alternative Markup Measures

Figure C1: Markups with different variable costs



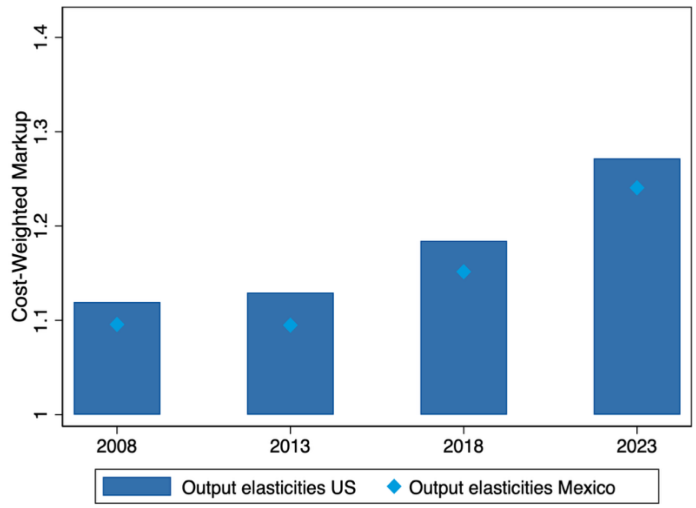
Source: INEGI, Orbis, and authors' calculations. Note: COGS refer to cost of goods sold and administrative expenses refers to administrative payroll costs.

Figure C2: Constant and time-varying output elasticities



Source: INEGI, Orbis, and authors' calculations. Note: De Loecker & Eeckhout (2020) estimates of output elasticities for the US are available for the period 1955-2016. We use output elasticity of 2016 for the 2018 aggregate markup estimate in this figure, and we omit 2023 due to lack of information.

Figure C3: Output elasticities Mexico, 2008-2023



Source: INEGI, Orbis, and authors' calculations. Note: Output elasticities for the US are computed through production function estimation, whereas output elasticities for Mexico are computed using Eslava et al. (2025) cost-share approach.

XI. Appendix D. Markup Growth Decomposition

Let μ_{it} denote the markup of industry i in year t, and let s_{it} denote industry i's cost share in year t, such that the cost-weighted aggregate markup in year t is $M_t = \sum_{i \in N} s_{it} \cdot \mu_{it}$. To assess whether aggregate markup growth is driven by markup changes within industries or by the reallocation of economic activity across industries with different markup levels, we decompose the change in the aggregate markup into a within component and a between component.

Total Change in the Aggregate Markup. The total change in the aggregate markup between two consecutive census years is:

$$\Delta M_t = M_t - M_{t-1}$$

Within and Between (Reallocation) Decomposition. This total change decomposes exactly into three components:

$$\Delta M_t = \sum_{i \in N} s_{it-1} \cdot \Delta\mu_{it} \; + \; \sum_{i \in N} \Delta s_{it} \cdot \mu_{it-1} \; + \; \sum_{i \in N} \Delta s_{it} \cdot \Delta\mu_{it}$$

where $\Delta\mu_{it} = \mu_{it} - \mu_{it-1}$ and $\Delta s_{it} = s_{it} - s_{it-1}$.

The first term is the within component, $\sum_{i \in N} s_{it-1} \cdot \Delta\mu_{it}$, which holds each industry's cost share fixed at its base-period level, and captures the portion of aggregate markup growth driven by markup changes within industries, holding the initial distribution of economic activity fixed.

The second term is the between (reallocation) component, $\sum_{i \in N} \Delta s_{it} \cdot \mu_{it-1}$, which holds markups fixed at their prior-period values and captures the portion of aggregate markup growth driven purely by shifts in the distribution of economic activity (cost shares) toward industries that already exhibited higher markups at the start of the period. Since the number of industries is fixed across periods, this term reflects reallocation of shares alone, rather than industry entry or exit.

The third term is the interaction term, $\sum_{i \in N} \Delta s_{it} \cdot \Delta\mu_{it}$, which captures the portion of aggregate markup growth arising in industries where reallocation and repricing occur jointly, that is, activity shifting toward (or away from) industries that are simultaneously becoming more (or less) high-markup within the same period.

PUBLICATIONS

Market Power in Mexican Industries
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