

Is the U.S. economy becoming more competitive?

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Abstract

Is the U.S. economy becoming more competitive? Using harmonized U.S. Economic Census data for nonfinancial 6-digit industries from 1997 to 2022, we show that the answer is no, at least from the perspective of industrial concentration. Sales-weighted concentration rose sharply between 1997 and 2002 and then remained elevated through 2022, with the top-four-firm sales share increasing from 29.5 percent in 1997 to 34.4 percent in 2002 and 36.5 percent in 2022. This apparent aggregate stability after 2002, however, masks continuing within-industry concentration. A shift-share decomposition shows that concentration increased within industries in every five-year Census interval, while changes in the relative size of industries partly offset this upward pressure. We also show that high concentration is persistent: once an industry becomes highly concentrated, it is substantially likely to remain there in subsequent Census waves. Our results do not measure product-market concentration, consumer welfare, or the causal effects of concentration. Rather, they document a macro-structural pattern: U.S. industrial concentration remains elevated, continues to spread incrementally, and is sticky at the top.

Keywords: Industrial concentration, market structure, monopolization, competition, U.S. economy, Economic Census, CR4 ratio,

JEL codes: L11, L16, D43, C82, O51, D40

1. Introduction

A central debate in recent political economy concerns whether the U.S. economy is undergoing a sustained shift towards monopolization. Despite a sharp rise in industrial concentration in the late 1990s (Grullon *et al.* 2019; Davis & Orhangazi 2021), subsequent evidence suggests that concentration stabilized after the early 2000s (Kulick and Card 2022), *even as* other common indicators of market power, including markups and profit margins, continued to rise (De Loecker *et al.* 2020; Davis and de Souza 2026). These patterns raise theoretical questions over whether the late-1990s rise in industrial concentration reflects a temporary deviation from competitive capitalism or an inherent tendency towards monopoly capitalism driven by accumulation, technological change, and financialization. These questions have become particularly salient with the expansion of the digital economy and platform-based business models and with the disruptions associated with the Covid-19 pandemic.

In this paper, we examine the long-run dynamics of industrial concentration in the United States using harmonized data for 6-digit nonfinancial industries from 1997 to 2022 to assess whether a flattening of aggregate concentration in the early 2000s reflects a reversal of concentration or instead conceals a change in the way concentration unfolds across industries. We ask three interrelated questions: Is average industrial concentration increasing? Does aggregate stability mask continued concentration within industries? And is high concentration persistent over time? We document an ongoing process of concentration within U.S. industries, in which incremental increases persist and accumulate over time. **First**, we show that sales-weighted concentration rose sharply between 1997 and 2002 and then remained elevated through 2022, with the weighted-average four-firm concentration ratio (CR4) increasing from 29.52 percent in 1997 to 34.37 percent in 2002 and 36.54 percent in 2022. **Second**, we use a shift-share decomposition to show that within-industry increases in concentration are consistently positive, while structural change—particularly, the reallocation of economic activity away from manufacturing—has offset these increases in the aggregate CR4 ratio since the early 2000s. **Third**, we show that concentration is persistent: industries that enter a high-concentration state are substantially more likely to remain there in the subsequent Census wave than to exit it. Taken together, these patterns indicate that concentration in U.S. industries is an ongoing, gradual, and durable process, rather than a discrete historical episode confined to the late 1990s and early 2000s.

The empirical trajectory of concentration bears directly on competing interpretations of competition, market power, and income distribution. In standard economic theory, concentration is a key indicator of market structure: it shapes prices, innovation, and welfare through its influence on firms' pricing behavior (CEA 2016; De Loecker & Eeckhout 2018). In contrast, in post-Keynesian and Marxian perspectives, industrial concentration reveals the structural evolution of capitalism itself. It embodies the tendency toward monopoly and oligopoly, and enables firms to administer prices, sustain markups, and capture a growing share of the social surplus. Thus, concentration links microeconomic competition to macroeconomic outcomes such as stagnant investment, a falling labor share, and rising inequality (Barkai 2016; Davis & Orhangazi 2021).

Renewed public and policy interest in monopolization tendencies in advanced economies, following a report by the U.S. Council of Economic Advisers (2016) and a feature in *The Economist* (2016), coincided with an empirical literature analyzing whether the U.S. economy has undergone a sustained rise in market power and, if so, what this rise implies for investment, wages, and inequality. This research documents that concentration has increased across most industries since the late 1990s, particularly in retail, information, and high-tech sectors, both in the U.S. (Grullon *et al.* 2019; Davis & Orhangazi 2021) and in Europe (Koltay *et al.* 2023). Proposed explanations include weaker antitrust enforcement, the diffusion of digital and informational technologies, and the productivity advantages of so-called “superstar” firms that have achieved dominant market positions (Autor *et al.* 2020). A broad body of work furthermore links rising market power to broader macroeconomic outcomes: higher markups and profitability, stagnant investment, a declining labor share, and growing income and wealth inequality (Barkai 2016; De Loecker and Eeckhout 2017; Grullon *et al.* 2019; Gutiérrez and Philippon 2017; Kurz 2017; Stiglitz 2016; Crouzet and Eberly 2018; Autor *et al.* 2020).

However, several economists have questioned whether rising industrial concentration necessarily indicates declining competition (Crouzet & Eberly 2018, Shapiro 2018). One central critique is conceptual: most studies measure concentration using industry classifications rather than economically defined markets that account for consumer substitution (Kulick and Card 2022). A second is that concentrated industries may display higher productivity and wages, suggesting that efficiency rather than market power effects. From this “neo-Schumpeterian” or efficiency-based interpretation, dominance reflects innovation rather than rent-seeking (Kulick & Card 2022; Castiglia *et al.* 2024).

These critiques show that the debate is not only empirical but theoretical, with competing interpretations emphasizing efficiency and innovation within competitive capitalism versus market power as a tendency toward monopoly capitalism. Speaking to this tension, Davis and Orhangazi (2021) emphasize the absence of a straightforward relationship between concentration and profitability, markups, or investment, thereby challenging both the “market power” and “efficiency” narratives. They also emphasize that most analyses, which rely on average across-industry measures, obscure important sectoral variation, as increases in concentration are widespread but disproportionately concentrated in the retail and information sectors.

Yet, the debate remains unresolved. Using 2017 Economic Census data, which became available after the empirical studies discussed above, Kulick and Card (2022) argue that average industrial concentration in the U.S. peaked around 2007 and declined slightly by 2017. They also suggest that concentration is not persistent, arguing that more concentrated industries tend to become less concentrated over time, while less concentrated ones often become more so. These conclusions complicate earlier narratives of relentless monopolization. Our analysis reassesses these claims using harmonized 6-digit industry data spanning the twenty-five-year period from 1997-2022. By distinguishing between aggregate trends, within-industry changes, and persistence over time, we show that the apparent flattening of average concentration does not imply a reversal of concentration dynamics. Instead, concentration continues to rise incrementally within industries, high concentration remains persistent once established, and these dynamics reaccelerate in the 2022 Census wave. In this sense, the apparent flattening of the aggregate series obscures ongoing concentration dynamics in the U.S. economy.

The rest of the paper is organized as follows. Section 2 discusses the data and presents our methodology. Section 3 describes trends in average concentration, Section 4 reports the shift-share decomposition, and Section 5 examines persistence. We conclude by discussing the relevance of our findings in relation to the concentration debate and outlining further research questions.

2. Data and methodology: defining concentration and industry

We use industry-level data on concentration and revenue published every five years for 1997-2022 by the U.S. Economic Census. To measure concentration, we use CR_n ratios, which measure the combined sales share of the top n firms in an industry, reported by the Economic Census for the top

4, 8, 20, and 50 firms.¹ We emphasize the CR4 ratio because it captures the sales share accounted for by an industry's four leading firms and is therefore a useful indicator of leading-firm dominance within Census-defined industries. We measure industry size using revenue (i.e. sales), defined as total gross operating revenue from goods or services provided, exclusive of sales tax or other taxes paid to the government.

Following the Economic Census, we define industries using the North American Industry Classification System (NAICS), a hierarchical system that classifies economic activity from broad to detailed levels of economic activity, from sectors (2-digit codes) to subsectors (3-digit codes), industry groups (4-digit codes) and, finally, detailed industries (6-digit codes). We use NAICS concordance files published by the Economic Census to harmonize each industry code with its 2022 definitions. By harmonizing, we address the fact that the Economic Census updates the boundaries of NAICS codes every five years to reflect changes in the industrial and product structure of the U.S. economy, such that a NAICS classification in one Census may not be comparable to the same classification in the next Census as industries split, merge, or disappear altogether. Since changing industry boundaries can affect both the numerator of the CR4 ratio (who the top four firms are) and its denominator (total industry revenue), shifts in the raw CR4 ratio using non-harmonized industry data may reflect new market boundaries rather than changing competitive structure. Thus, harmonizing allows us to follow concentration within consistently defined industries over time, reducing distortions caused by changes in Census classifications. The ability to follow industries over time is especially important given that our focus in this paper is on within-industry trends and persistence, rather than on cross-sectional patterns for which the consistency of individual industries' boundaries may be less central.

We use the concordance files to identify cases where 6-digit industries' boundaries change between two Census years. In these cases, we update earlier 6-digit codes to reflect their definition in

¹ While the Herfindahl-Hirschman Index (HHI) is used by the U.S. Department of Justice and the Federal Trade Commission in conducting merger reviews (Horizontal Merger Guidelines, 2023), the Economic Census only reports the HHI for manufacturing (NAICS codes beginning in 31, 32, and 33). Furthermore, the HHIs constructed from public firm data, like Compustat, have a very low correlation with Census measures (Keil, 2017). Studies on broad concentration tendencies across all industries therefore tend to rely on CR ratios.

the subsequent Census, thereby standardizing all industries to their 2022 boundaries.² The resulting harmonized dataset describes concentration within and across consistent 6-digit industries for the twenty-five-year period from 1997-2022.³ Because these concordance files are at the 6-digit level, we also focus on 6-digit industries. While this focus differs from previous studies that analyze concentration at the 3- or 4-digit level (e.g. Grullon et al, 2019; Davis and Orhangazi, 2021), it allows us to follow consistent industries over time within detailed industrial boundaries that may more closely approximate product or market segments than broader 3- or 4-digit classifications. Note that, since concentration tends to be higher in more narrowly defined industries, this approach mechanically yields higher levels of the CR4 ratio than analyses at the 3- or 4-digit levels.

Our primary sample includes 707 6-digit nonfinancial industries with complete harmonized CR4 data for all waves from 1997-2022.⁴ To arrive at this sample, we start from our harmonized dataset, and exclude industries with incomplete CR4 data, whether because the Economic Census only publishes the data in a limited number of waves (e.g. the Census only reports concentration ratios for industries in construction and mining since 2017), or because CR4 data is missing in one or more years due to disclosure avoidance. To focus on nonfinancial activity, we also exclude finance,

² For example, there are cases in which two or more industries merge. Consider a hypothetical industry A with revenue of 80 and a CR4 ratio of 50% and industry B with revenue of 20 and a CR4 ratio of 25% in 2017, which merge in 2022. To apply 2022 industry boundaries to the 2017 data, we merge industries A and B in 2017 by summing their revenue and computing their joint CR4 ratio as their revenue-weighted average CR4 ratio. In this example, the merged industry has revenue of 100 in 2017 and a CR4 ratio of 45% ($0.8 \times 0.5 + 0.2 \times 0.25$). One industry can also split into two or more industries. For example, industry C, with revenue of 200 and a CR4 ratio of 40% in 2017, splits into industries D and E in 2022 that account for 80% and 20% of their combined 2022 revenue, respectively. To apply 2022 industry boundaries to 2017, we allocate industry C's revenue to industries D and E in 2017 using their 2022 revenue shares (i.e. industry D has revenue of 160, equal to 80% of 200, and industry E has revenue of 40, equal to 20% of 200) and assign industry C's 2017 CR4 ratio to both industries D and E (i.e. 40%). See the online Appendix for additional details and scenarios.

³ This harmonization produces a consistent panel of industries, but it cannot fully recover the firm identities that would be needed to compute exact counterfactual CR4 ratios under later industry boundaries. In cases of mergers or splits of NAICS industries, reconstructed CR4 ratios based on revenue shares, following the allocation rules described in footnote 2. These rules improve comparability over time but should be interpreted as approximations.

⁴ These industries are in 12 sectors: (i) utilities; (ii) manufacturing; (iii) wholesale trade; (iv) retail trade; (v) transportation and warehousing; (vi) information; (vii) professional, scientific and technical services; (viii) administrative and support and waste services; (ix) health care and social assistance; (x) arts, entertainment, and recreation; (xi) accommodation and food services; (xii) other services except public administration.

insurance and real estate (6-digit industries under NAICS 52 and 53), as well as industries for which the Census concentration statistics include tax-exempt entities in some, but not all, years, making their series non-comparable over time.⁵

3. The evolution of average concentration

In this section, we report trends in aggregate concentration and document the distribution of changes in concentration across industries over time. We begin with the aggregate trend. Table 1 summarizes sales-weighted CR4, CR8, CR20, and CR50 ratios for each Census wave between 1997 and 2022. Panel A presents these calculations for the baseline sample, which uses harmonized industry definitions and the primary set of industries described above. It shows that sales concentration rises markedly in the late 1990s and early 2000s, increasing nearly five percentage points between 1997 and 2002, from 29.52 percent to 34.37 percent. Notwithstanding a modest uptick of 1.2 percentage points in 2022, concentration remains broadly stable at this higher level thereafter, with just over one third of total sales accruing to industries' top four firms since 2002. Broader concentration measures (CR8, CR20, and CR50) show similar patterns, rising sharply between 1997 and 2002 and remaining elevated thereafter, with 2022 sales-weighted averages close to their 25-year peaks.

[Table 1]

Table 1 also shows that this trend is robust to harmonization choices and sample selection. Panel B reports analogous calculations using non-harmonized industry definitions. Since we harmonize industries to their 2022 boundaries, the final columns of Panels A and B are mechanically

⁵ These industries are in the following sectors: Professional, Scientific, and Technical Services, Educational Services, Health Care and Social Assistance, and Arts, Entertainment, and Recreation. In these sectors, the Census includes entities with tax-exempt status (i.e. nonprofit or government-owned) in some years but not others. This inconsistency can introduce structural breaks in CR4 ratios that reflect changes in the underlying universe of firms rather than changes in concentration ratios. In the hospital sector (NAICS 622), for instance, the revenue-weighted average CR4 ratio across 6-digit industries within the hospital sector (NAICS 622) falls sharply from 65.5% in 1997-2012 to 9.4% in 2017.

equivalent; however, the weighted-average trends are also nearly identical over the full period. Panel C uses harmonized industry definitions but a broader sample that includes industries with incomplete CR4 data. While Panel C suggests that concentration declines moderately in 2017 and 2022, this decline reflects a mechanical break in the series due to the fact that the Census first publishes CR n ratios for construction in 2017. Construction has markedly below-average concentration (equal to a weighted-average of 8.54 percent in 2017 and 2022 across its six-digit industries), such that its inclusion lowers the aggregate measure. Thus, neither the level nor the path of aggregate concentration hinge on industry harmonization or sample selection criteria.

Accordingly, average concentration rises between the late 1990s and early 2000s and remains elevated thereafter. To describe how this pattern is reflected along the distribution of CR4 ratios, Figure 1 plots kernel density estimates of the CR4 distribution for each Census wave. Figure 1a shows the unweighted distribution, in which each industry has an equal unit weight. In contrast, Figure 1b shows the revenue-weighted distribution (i.e. the share of revenue at each level of concentration). Figure 1a shows that, consistent with Table 1, the distribution of CR4 ratios shifts right between 1997 and 2002. This shift is concentrated in the lower part of the distribution (CR4 ratios less than 20%), indicating that many low-concentration industries experienced rising concentration between these years. After 2002, the unweighted distribution changes comparatively little, capturing relative stability in the cross-sectional distribution of industry concentration.

Figure 1b, in contrast, turns to the revenue-weighted distribution. When this distribution moves to the right, it shows that a larger share of aggregate sales is accounted for by industries with higher concentration. As in Figure 1a, there is a clear rightward shift at low CR4 ratios between 2007 and 2002. In this case, however, the revenue-weighted distribution continues to shift modestly at moderate levels of concentration thereafter and, in 2022, there is a thickening of the right tail. While the magnitudes of these shifts are modest, they nonetheless show that an increasing share of aggregate sales has been accounted for by industries with higher concentration. Thus, despite a stable the aggregate concentration ratio, Figure 1 points to continued changes in the distribution of CR4 ratios across underlying industries after 2002.

[Figure 1]

These patterns are corroborated by Figure 2, which compares the unit-weighted and revenue-weighted distributions of *changes* in the CR4 ratio across 6-digit industries in the first and last decades of our sample (1997-2007 and 2012-2022). Figure 2a shows the unweighted distribution of these changes across ten-percentage-point bins and Figure 2b shows the corresponding distribution weighted by total revenue. These figures illustrate three main patterns. **First**, Figure 2a shows that concentration rises in a majority of industries in both decades. Specifically, the CR4 ratio rises in 66.2% of industries between 1997 and 2007, and in 55.7% of industries between 2012 and 2022. Thus, even as the aggregate concentration ratio is largely steady, increases in concentration are widespread and continue in recent years. **Second**, these increases in concentration are typically small in magnitude. Among industries with CR4 growth, most see changes between zero and ten percentage points, while large changes in either direction are rare. Together, these two patterns suggest that concentration increases are also incremental.

[Figure 2]

Third, the revenue-weighted distribution in Figure 2b shows that concentration increases are not limited to small industries. As in Figure 2a, Figure 2b shows that a majority of revenue is in industries with rising CR4 ratios in both 1997-2007 (75.3%) and 2012-2022 (64.7%), again reflecting small increases of zero to ten percentage points. In fact, the revenue share of industries with rising concentration exceeds the share of industries themselves by approximately ten percentage points in both decades (75.3% of revenue versus 66.2% of industries in 1997-2007, and 64.7% of revenue but 55.7% of industries in 2012-2022). This pattern suggests that large industries are somewhat more likely to have experienced rising concentration—i.e. that economically important industries contribute disproportionately to concentration tendencies.

Thus, even as the aggregate revenue-weighted CR4 ratio has remained relatively stable, there have been widespread and incremental increases in concentration, including in economically significant industries, over the full 1997-2022 period. These patterns suggest that offsetting changes in industry size may be moderating the aggregate trend, a possibility we examine directly in the following section. In turn, the fact that CR4 ratios are widespread and incremental raises the question of if they are also persistent, which we examine in Section 5.

4. A shift-share decomposition: distinguishing within-industry changes and revenue reallocation

Section 2 indicates that, even as the revenue-weighted CR4 ratio suggests that concentration tendencies halted in the U.S. after 2002, concentration continued to rise within a majority of industries through the 2010s. In this section, we reconcile these patterns using a shift share decomposition that shows, first, that the average within-industry CR4 ratio has risen after 1997, but that this increase has been offset by structural change (i.e. shifts in relative industry shares). Second, we document the underlying sectoral structure of these dynamics. Within-industry increases are disproportionately driven by retail, wholesale, and information, and these increases are offset, most substantively, by the declining revenue share of the manufacturing sector. There is, accordingly, a continued tendency towards concentration within U.S. industries, even as the secular contraction of manufacturing dampens its effect on the aggregate CR4 ratio.

These results speak to the previous sectoral evidence on industrial concentration. While early contributions suggested that rising concentration took place across sectors (Grullon *et al.* 2019), subsequent work emphasizes sectoral expressions of deepening monopoly power, including key roles for intellectual-monopoly-driven industries such as pharmaceuticals and technology (Rikap 2019; Rikap and Lundvall 2022). Davis and Orhangazi (2021) likewise stress the contributions the information and retail sectors for aggregate concentration trends in the late 1990s and early 2000s.

This sectoral heterogeneity persists through the 2010s. Table 2 reports sales-weighted average CR4 ratios across the six-digit industries within each two-digit sector, with sectors ranked in descending order by the percentage point change in their CR4 ratio from 1997 to 2022. These calculations show that changes in concentration since 1997 are highly uneven, with the sharpest increases in retail, wholesale, transportation and warehousing, and information. Retail stands out most clearly, with the sales-weighted average CR4 rising 20.8 percentage points, from 24.62 percent in 1997 to 45.42 percent in 2022, while wholesale and transportation and warehousing also record sizeable increases of 13.77 and 10.19 percentage points, respectively. By contrast, concentration has changed little in manufacturing, professional and technical services, health care, and several other sectors, and has even declined slightly in accommodation and food services and utilities. Thus, rather than being uniform across the economy, the long-term rise in concentration is

disproportionately driven by a limited number of sectors—especially retail and, to a lesser extent, wholesale, transportation, and information. This is also a period, however, with notable structural change. Table 3 reports corresponding changes in these 2-digit sector’s shares of revenue within our sample. These calculations show substantial shifts in the composition of economic activity across broad sectors since 1997, including an almost 14-percentage-point decline in manufacturing’s share of total revenue that has taken place alongside growth in wholesale and several service-related sectors.

[Table 2]

[Table 3]

4.1 Decomposition method

We separate within-industry and between-industry contributions to the change in the aggregate CR4 ratio using a standard additive shift-share decomposition, adapted from DeLoecker, Eeckhout, and Unger (2020). This decomposition rewrites the change in the sales-weighted CR4 ratio between two years as the sum of three terms: a within-industry component, a between-industry component, and a cross term:

$$\Delta CR4_t = \underbrace{\sum_i s_{i,t-5} \Delta CR4_{i,t}}_{\text{Within-industry change}} + \underbrace{\sum_i CR4_{i,t-5} \Delta s_{i,t}}_{\text{Between-industry change}} + \underbrace{\sum_i \Delta CR4_{i,t} \Delta s_{i,t}}_{\text{Cross term}}$$

where i refers to industry, s refers to each industry’s share of total sales, and Δ denotes the change between two Census waves t and $t-k$.

In this decomposition equation, the left-hand side measures the percentage-point change in the weighted-average CR4 ratio between two Census years. The first term on the right-hand side is the **within-industry component**: it captures the portion of the aggregate change attributable to changes in concentration within industries, holding each industry’s initial sales share constant. In other words, it indicates how much the weighted-average CR4 ratio would have changed if only industry-level concentration ratios had changed. The second term is the **between-industry**

component, or structural-change component: it captures the portion of the aggregate change attributable to shifts in industries’ relative sales shares, holding each industry’s initial concentration ratio constant. This term shows how much the weighted-average CR4 ratio would have changed if aggregate concentration only moved because of changes in the allocation of economic activity across industries, evaluated at initial levels of concentration. The third term is the **cross term**, which captures the interaction between changes in industry concentration and changes in industry size. It is positive when changes in concentration and changes in revenue shares covary positively – for example, when industries with rising (falling) concentration also gain (lose) sales share. The cross term is therefore informative about whether changes in concentration and changes in industry size reinforce or offset one another on net. By construction, the three terms on the right-hand side sum to the total change in each period.

4.2 Aggregate decomposition results

Table 4 reports the decomposition results, both over the full 1997-2022 period and between successive Economic Censuses. The first column reports the percentage point change in the weighted-average CR4 ratio, and the next three columns decompose this total percentage point change into its within-industry, between-industry, and cross components. These decompositions show that the increase in aggregate concentration between 1997 and 2022 primarily reflects rising concentration within industries. Over the full period, the **within-industry component** is positive and accounts for a majority of the rise in the weighted-average CR4 ratio (6.44 of the 7.03 percentage point total increase). This pattern is reiterated by sub-period decompositions, which show that the within-industry component is positive in each 5-year interval and sometimes exceeds the weighted-average CR4 ratio’s total change. Specifically, the within component accounts for most of the increase in concentration in 1997-2002 and more than accounts for the aggregate increase in 2002-2007. While this component is economically very small in 2007-2012, its magnitude increases again thereafter, especially in 2017-2022, when it reaches 1.12 percentage points. These patterns indicate that, absent offsetting changes in industry size, aggregate concentration would therefore have increased by more than what is actually observed and that concentration continued to rise within industries even in the most recent Census wave.

[Table 4]

By contrast, the **between-industry component** equals -2.80 percentage points over the full 1997-2022 period and is negative in every sub-period between Census waves. Changes in the relative size of industries have therefore consistently reduced the weighted-average concentration ratio. Put differently, structural change has shifted economic activity, on balance, away from industries that were initially more concentrated and toward industries that were initially less concentrated. Thus, in the absence of this compositional shift, aggregate concentration would have increased markedly more after 1997.

Like the within term, the **cross term** is positive in every period as well, equaling 3.38 percentage points over the full period. This term indicates that changes in concentration and changes in industry size have reinforced one another on net: industries with rising concentration have tended to gain sales share, while those with falling concentration have tended to lose sales share. The cross component therefore amplifies the aggregate impact of within-industry concentration increases on the aggregate CR4 ratio through compositional change.

Taken together, these results suggest that the apparent stabilization of the weighted-average CR4 ratio after 2002 masks two offsetting processes. On the one hand, concentration has continued to rise within industries, and industries with rising (falling) concentration have also tended to expand (shrink). On the other hand, structural change has reallocated activity toward industries that were, at least initially, less concentrated. The coexistence of a negative between-industry term and a positive cross term is therefore not contradictory. Rather, it distinguishes industries with high initial concentration levels and industries with rapid increases in concentration: the former tended to lose relative weight, while the latter tended to gain it.

These findings also build on the distributional evidence in Figure 2, which demonstrates that the positive within-industry component is not driven by a small number of extreme outliers. In both 1997–2007 and 2012–2022, concentration rose within a majority of industries, and these increases were typically modest, mostly in the 0 to 10 percentage-point range. In other words, within-industry concentration increases have generally been widespread and incremental rather than exceptional. At the same time, the revenue-weighted distribution shows that these increases have not been confined to small industries: industries with rising CR4 ratios account for a larger share of total revenue than

of industries by number. Figure 2 therefore complements the decomposition by showing that the positive within-industry and cross components reflect a broad pattern of moderate concentration increases across industries, including economically important ones, even in periods when the aggregate weighted-average CR4 ratio is relatively stable.

Several theoretical traditions provide a useful lens for understanding mechanisms underlying this decomposition and distributional evidence. From a **mainstream industrial-organization perspective**, the results are consistent with industry life-cycle dynamics: sectors that were already highly concentrated may be relatively mature and slower-growing, so their revenue shares decline, while sectors that were initially less concentrated expand and experience rising concentration as successful firms gain scale. From a **post-Keynesian perspective**, the results can reflect structural change driven by uneven demand growth and cumulative causation: expenditure and investment shift toward more dynamic sectors, and expansion within those sectors is accompanied by increasing concentration as scale economies and strategic advantages accumulate. From a **Marxian perspective**, the findings underscore a long-run tendency towards monopolization within industries, even where aggregate concentration appears stable. In turn, the negative between-sector component does not offset or reverse concentration tendencies, but instead changes their sectoral expression: older, already-concentrated sectors have lost relative market share, while concentration advances in newer or expanding fields of accumulation. In each case, the recent flattening of aggregate concentration need not imply that concentration dynamics have ceased, but instead the coexistence of continued within-industry concentration increases and offsetting changes in the composition of economic activity across industries.

4.3 Sectoral contributions

In Figure 3 we describe the sectoral patterns underlying rising concentration by reporting each 2-digit sector's contribution to changes in the weighted-average CR4 ratio between 1997 and 2022, calculated by summing the within-, between-, and cross-contributions across the sector's component 6-digit industries.⁶ We include two panels: the top panel includes all two-digit sectors in our sample,

⁶Thus, Figure 3 reports sector-level within, between, and cross contributions that are the sums of these terms for its underlying 6-digit industries, such that a sector can have a positive cross term even when the within- and between-industry components have opposite signs.

whereas the bottom panel excludes manufacturing, whose between-sector decline dominates the scale in the top panel, to improve visual clarity for the remaining sectors.

Figure 3 shows that the aggregate decomposition is highly uneven across 2-digit sectors. First, consistent with Table 2, the positive within-industry component is concentrated in a small number of sectors, namely retail, wholesale, and information. Retail stands out with the single largest positive within-sector contribution, equal to 3.51 percentage points. Wholesale also makes a sizeable positive within-industry contribution of 2.08 percentage points, while information contributes an additional 0.53 percentage points. Together, these three sectors account for the majority of the aggregate within-industry effect documented in Table 4.

Second, Figure 3 shows that the negative between-industry component is overwhelmingly dominated by manufacturing, which contributes -6.12 percentage points to the change in the aggregate CR4 ratio between 1997 and 2022. This pattern reflects the long-run reallocation of economic activity away from manufacturing over this period. Table 2 shows that, despite a small change in its average CR4 ratio between 1997 and 2022 (such that its within contribution is small), manufacturing is one of the most concentrated sectors in the sample throughout the period, with an average sales-weighted CR4 ratio of 43.9%. Manufacturing's revenue share also contracted sharply, from 33.6% in 1997 to 19.9% in 2022. Because the between-industry component of the decomposition weights changes in industry size by initial concentration, manufacturing's high initial CR4 ratio combined with its large decline in revenue share yields a large negative between contribution. Put differently, the secular decline of manufacturing has dampened the impact of rising within-industry concentration elsewhere in the economy on the aggregate concentration ratio. This large negative contribution, furthermore, dominates the aggregate between-industry effect despite notable positive contributions from wholesale and information of 2.56 and 0.64 percentage points respectively, which reflect these sectors' growing shares of total revenue shares over the period.

Third, the cross term is positive in most major sectors, with the largest cross components in wholesale trade, manufacturing, transportation and warehousing, and retail. Together, these sectors account for a majority (74.95%) of total revenue in 2022. Notably, these sectors have very different patterns of change in their relative revenue shares between 1997 and 2022: while manufacturing's revenue share declines substantially and retail's declines modestly, wholesale expands substantially and information grows modestly. The positive cross contributions therefore do not reflect simple sectoral expansion. Rather they indicate that, within these sectors, industries experiencing rising

concentration tended to gain revenue share relative to those experiencing falling concentration. In other words, changes in industry size and concentration have been positively correlated within these sectors. As such, the positive cross component in Table 4 is driven by a limited set of economically important sectors in which changes in relative industry size have reinforced, rather than offset, within-industry concentration dynamics.

Altogether, Figure 3 reinforces that aggregate concentration stability masks two distinct structural processes. On the one hand, concentration continues to rise within several major sectors, especially in trade-related sectors such as retail and wholesale, as well as in information. On the other hand, large compositional shifts—and, above all, the declining revenue share of manufacturing—offset part of this upward pressure. Put differently, the flattening of the aggregate series reflects a balance between continued concentration in expanding trade, distribution, and information-intensive sectors and the declining revenue share of manufacturing.

One plausible economic interpretation is that sectors such as retail, wholesale, and information are those in which scale economies, logistics, digital coordination, data advantages, and platform-type dynamics have become especially important. These forces may help explain why these sectors repeatedly generate positive within-industry contributions. Manufacturing, by contrast, matters more as a structural-weight effect than as a uniform engine of rising within-industry concentration in the later periods. Thus, these decompositions point to a broader transformation of the U.S. economy in which concentration increasingly advances in trade, distribution, and information-intensive sectors, while the declining weight of manufacturing tempers the aggregate outcome.

5. Persistence

The previous sections showed that average concentration remains high through 2022 and that relative stability of the aggregate series masks continued, incremental within-industry increases. These patterns raise the question of whether these increases in concentration are temporary or persistent. In other words, once an industry becomes highly concentrated, does it remain that way or does it subsequently return to a lower-concentration state? This distinction is important because if high concentration is transitory, then periods of elevated concentration may reflect temporary adjustments, technological shocks or short-run consolidation waves. In contrast, if increases in concentration—even relatively incremental ones—are permanent, then they imply longer-lasting

changes market structure and competitive conditions, consistent with an ongoing tendency towards monopolization.

<Table 5>

Table 5 begins by reporting the distribution of 6-digit industries across fixed CR4 intervals in each Census wave. Two patterns stand out: First, the number of industries in the lowest CR4 interval (0-20) declines substantially over time, falling from 247 industries in 1997 to 170 in 2022. Second, the upper tail of the distribution expands over time. The number of industries with CR4 ratios between 60-80 percent rises from 55 to 78, while the number of industries in the most concentrated interval (80-100) more than doubles, from 15 to 33, between 1997 and 2022. Thus, the table does not suggest a broad tendency for highly concentrated industries to revert to low levels of concentration. On the contrary, over time more industries are in the upper part of the concentration distribution and fewer in the lower part.

<Figure 4>

The patterns in Table 5 could arise either because of persistent concentration within highly concentrated industries, or because of substantial turnover within the set of highly concentrated industries, as some industries exit the high-concentration interval while others enter it. Figure 4 examines this question of transition dynamics directly, by plotting each industry's CR4 ratio in one Census wave against its CR4 ratio in the subsequent wave. If concentration were weakly persistent, the points would be widely dispersed, showing that highly concentrated industries in one period frequently reappear at much lower levels in the next. However, the plots shows that many observations lie close to the 45-degree line, capturing a strong tendency for industries to remain near their previous positions in the concentration distribution. This persistence is especially pronounced in the upper tail. Rather than continual turnover in the upper tail of the distribution, the increased number of highly concentrated industries documented in Table 5 therefore appears to reflect that concentration is sticky over time.

This evidence of persistence is reinforced by a regression framework that estimates the probability that a highly concentrated industry stays in a high concentration state. Specifically, we estimate the following linear probability model:

$$High_{i,t+5} = \beta_0 + \beta_1 High_{i,t} + \gamma_t + \epsilon_{i,t}$$

where the dependent variable is an indicator equal to one if an industry exceeds a given CR4 threshold in Census year $t+5$ and the key coefficient of interest is on an indicator variable equal to one if an industry also exceeds that threshold in Census year t (i.e. in the previous survey wave). Thus, β_1 estimates state dependence in concentration, defined by the difference in the probability of being in a high-concentration state in $t+5$ between industries that are above and below the high-concentration threshold in period t . In other words, it captures how much more likely an industry that is highly concentrated in t is to remain highly concentrated in $t+5$, relative to industries that are not. We use thresholds ranging from 50% (following Koltay *et al.* 2023) to 80% to define high-concentration states. This specification also includes Census-wave fixed effects, to account for period-specific factors that are common across industries, and we cluster standard errors at the industry level.⁷

<Table 6>

The results, which we report in Table 6, show a striking degree of persistence. Across all threshold definitions, the coefficient on lagged high concentration is large, positive, and statistically highly significant. Using the 50 percent threshold, industries that are highly concentrated in one Census wave are about 78 percentage points more likely to be highly concentrated in the next wave

⁷ We do not include industry fixed effects because the specification estimates persistence in transitions between concentration states across Census waves and, in settings with substantial state persistence, industry fixed effects would absorb the relevant variation. Note also that, because of the forward on the left-hand-side of the estimating equation, we estimate probabilities between five waves of data (1997-2002, 2002-2007, 2007-2012, 2012-2017, 2017-2022).

than industries below that threshold. The estimated coefficient is nearly identical when the threshold is raised to 60 or 70 percent, and remains very large even for the strictest definition, CR4 above 80 percent, where the coefficient is still approximately 0.73. Adding Census-wave controls makes virtually no difference to the estimates. The substantive conclusion is therefore robust: once an industry crosses into a high-concentration state, it is very likely to remain there in the subsequent Census wave. Unlike Card and Kulick (2022), who infer that concentration is *not* persistent based on changes in average concentration within coarsely defined CR4 groups classified simply by their 2002 CR4 levels, these results directly estimate within-industry state dependence. They therefore provide more direct evidence that, once concentration increases (even if only incrementally), those increases tend to persist over time.

5.3 Exceptions and interpretation

This evidence points to an important distinction between spread and persistence. Sections 2 and 3 show that concentration continues to increase in a majority of industries, even when the aggregate weighted-average CR4 ratio appears broadly stable. The results in this section furthermore show that these increases are not simply short-lived fluctuations. Instead, industries that become highly concentrated tend to remain highly concentrated. High concentration, in this sense, is state-dependent: crossing into the upper part of the distribution is associated with a strong likelihood of staying there.

At the same time, persistence should not be interpreted as immobility. Some industries do move out of high-concentration states, and some less concentrated industries move into them. The raw industry-level data plotted in Figure 4 show that a nontrivial minority of industries do move out of high-concentration states, and in some cases the declines are substantial. The clearest examples include Computer Facilities Management Services, Agents for Wireless Telecommunications Services, Motion Picture and Video Distribution, Medicinal and Botanical Manufacturing, Advertising Material Distribution Services, Cookie and Cracker Manufacturing, Electric Bulk Power Transmission and Control, and Interurban and Rural Bus Transportation, all of which exhibit relatively large declines in CR4 after earlier periods of high concentration. These exceptions are revealing not because they overturn the broader persistence result, but because they show where reversion is most likely to occur. The industries with the sharpest sustained declines are

concentrated in a few sectors—especially manufacturing, information, utilities, and distribution-related services—and many appear to be industries transformed by digitization, disintermediation, e-commerce, product proliferation, or supply-chain restructuring. In information and media-related activities, for example, digital delivery and new distribution channels likely eroded older concentrated intermediary structures; in retail and consumer goods, niche entry, online sales, and product differentiation may have weakened incumbent dominance; and in several manufacturing and utility industries, globalization, supplier fragmentation, technological change, and restructuring appear to have broadened the set of significant producers. These interpretations are suggestive and identifying these mechanisms would require industry-specific analysis, which is beyond the scope of this paper.

In short, the descriptive evidence from Sections 3 and 4 already showed that concentration change is often incremental rather than dramatic; the persistence evidence points in the same direction. The point is not that industry positions never change, but that reversion from high concentration appears limited. The dominant pattern is one of stickiness rather than repeated movement back toward low-concentration industry structures.

6. Concluding remarks

We reassessed recent trends in U.S. industrial concentration using harmonized Economic Census data for 707 nonfinancial 6-digit industries from 1997 to 2022. Three findings stand out. First, sales-weighted concentration rose sharply between 1997 and 2002 and then remained elevated through 2022. Second, apparent aggregate stability masks continued within-industry increases in concentration: in every five-year interval, the within-industry component of the shift-share decomposition is positive, while structural change offsets part of this upward pressure. Third, high concentration is persistent: industries that enter a high-concentration state are substantially more likely to remain there in the subsequent Census wave. Taken together, these findings show that concentration in the U.S. economy remains elevated, continues to rise within many industries, and is sticky at the top.

These findings qualify the view that U.S. industrial concentration peaked and then began to reverse after the mid-2000s. The apparent flattening of the aggregate series does not indicate a generalized return to lower concentration. Rather, it reflects the coexistence of continued

concentration increases within many industries, negative between-industry reallocation effects, and strong persistence among highly concentrated industries. In this sense, the 2022 Economic Census does not overturn the concentration debate; it shows that the relevant dynamics are more heterogeneous, incremental, and structurally embedded than a simple aggregate trend suggests.

These findings should nevertheless be interpreted within several important boundaries. Most importantly, concentration measures used here are calculated within NAICS-defined industries, not economically defined product or geographic markets. NAICS industries are administrative and statistical categories, whereas antitrust and welfare analysis would require market definitions based on substitution patterns. This limitation is well known in the concentration literature. Our results therefore do not provide a direct measure of consumer welfare or competitive harm but rather speak to the evolution of industrial concentration as a macro-structural phenomenon.

Other limitations follow from the changing organization of the U.S. economy. Some of the most important contemporary arenas of economic power—such as internet search, social media, e-commerce platforms, cloud computing, and digital advertising—are not clearly captured by NAICS boundaries. Platform ecosystems, conglomerate structures, cross-market complementarities, and local-market dominance may all be missed or distorted by national 6-digit industry measures. A firm such as Amazon, for example, spans retail, logistics, cloud services, and advertising, while other large firms combine platform activities with hardware, software, media, or business services. Industry-based CR4 ratios cannot fully capture these forms of cross-market leverage, internal complementarities, or conglomerate power.

Conversely, in tradable sectors, national concentration among U.S.-based producers may overstate domestic market power where import competition is substantial. More generally, concentration is not mechanically equivalent to less competition. Higher concentration may reflect market power and rent extraction in some industries, but intensified oligopolistic rivalry, productivity differences, scale economies, logistic advantages, network effects, globalization or quality upgrading in others.

There are also several additional limitations specific to our data and method. Because we rely on harmonized 2022 industry definitions, some earlier-year concentration ratios must be reconstructed using concordance-based allocation rules, which improve comparability over time but cannot perfectly reproduce historical market structure. Our preferred sample excludes finance and real estate, industries with incomplete CR4 coverage, and sectors in which changes in the treatment of

tax-exempt entities create structural breaks. This is particularly relevant in activities such as hospitals, where the underlying universe of reporting entities changes across Census waves. In addition, the Economic Census provides concentration ratios only every five years, limiting our ability to capture shorter-run adjustments, merger waves, or cyclical effects. Finally, the paper remains descriptive in a more general sense: it documents levels, spread, and persistence, but does not test causal channels linking concentration to prices, wages, markups, investment, innovation, sales growth, or profitability.

These limitations point directly to several avenues for further research. One promising direction would be to connect the industry-level concentration measures used here to other data sources—firm-level accounting data, local-market data, trade data, price indexes, or labor-market outcomes—to better distinguish between market-power, efficiency, and globalization explanations. A second would be to develop measures of concentration that more fully incorporate platform activities, conglomerate linkages, and ecosystem power, especially in digital industries that are only imperfectly mapped into NAICS classifications. A third would be to study the relationship between national and local concentration more systematically, particularly in sectors where market power may be highly localized. More broadly, the paper suggests the value of moving beyond average concentration alone. Future work should continue to examine the interaction between within-industry concentration, structural change, and persistence, since aggregate stability can obscure ongoing monopolization in some parts of the economy even as activity shifts toward others. In that sense, the main lesson of this paper is not that concentration has risen uniformly everywhere, nor that it can be read straightforwardly as monopoly in every case, but that concentration remains a central and evolving feature of the U.S. economic structure—one whose interpretation requires closer attention to industry definitions, structural transformation, and the heterogeneous forms that competition now takes.

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Tables:

Table 1: Sales-weighted average concentration ratios

	1997	2002	2007	2012	2017	2022
Panel A: Harmonized industry definitions, primary sample of industries						
CR4	29.52	34.37	34.76	35.27	35.35	36.54
CR8	39.22	44.27	45.02	45.93	44.13	46.60
CR20	50.49	55.09	56.75	58.40	57.44	58.68
CR50	60.20	64.16	66.16	67.88	66.96	68.00
Panel B: Raw (non-harmonized) industry definitions, primary sample of industries						
CR4	29.51	34.35	34.78	34.97	35.34	36.54
CR8	39.17	44.24	45.02	45.87	44.15	46.60
CR20	50.42	55.05	56.61	58.33	57.44	58.68
CR50	60.14	64.11	66.16	67.82	66.96	68.00
Panel C: Harmonized industry definitions, broad sample of industries						
CR4	29.56	34.06	34.30	34.93	33.08	34.08
CR8	39.24	43.73	44.35	45.46	41.38	43.65
CR20	50.48	54.30	55.83	57.74	53.98	55.35
CR50	60.18	63.20	65.07	67.07	63.35	64.52

Source: Authors' calculations from Economic Census concentration statistics

Notes: Means are weighted by industry revenue. Panel A reports the sales-weighted CR4 ratio for our preferred (baseline) sample, which we use throughout the remainder of our analysis. It uses harmonized industry definitions and includes all 6-digit industries with complete CR4 coverage for all six Census waves, exclusive of finance, real estate, and industries whose underlying firm universe is affected by changes in tax-status classification over time. Panel B uses raw (non-harmonized) industry definitions and the same sample. Panel C uses harmonized industries and a broader sample that includes industries with incomplete CR4 coverage due to changes in Census coverage or disclosure avoidance. See Section 2 for variable definitions, harmonization details, and sample restrictions.

Table 2: Sales-weighted average CR4 in 2-digit sectors

Two-digit sector	NAICS	1997	2002	2007	2012	2017	2022	pp Δ
Retail	44–45	24.62	33.71	37.30	39.04	39.88	45.42	20.80
Wholesale	42	20.52	31.85	29.68	31.35	32.61	34.29	13.77
Transport & warehousing	48–49	30.61	34.16	38.17	40.36	41.89	40.79	10.19
Information	51	44.10	49.70	52.35	52.00	52.87	51.79	7.70
Administrative	56	22.06	24.09	25.85	25.56	29.27	25.72	3.67
Health care & social assistance	62	5.43	4.89	5.83	6.89	5.97	8.00	2.58
Other services	81	12.46	14.42	14.87	13.85	15.81	14.50	2.04
Manufacturing	31–33	42.26	44.75	44.92	44.32	43.72	43.24	0.97
Arts, entertain., & recreation	71	23.01	21.13	21.08	21.51	24.50	23.40	0.39
Prof., sci., & tech. services	54	18.07	18.85	21.16	22.29	19.79	18.20	0.13
Accom. & food services	72	13.79	17.44	18.48	15.99	14.15	13.71	-0.08
Utilities	22	25.82	23.17	22.98	24.22	25.34	24.57	-1.25

Source: Authors' calculations from Economic Census concentration statistics

Notes: Two-digit sector means are the average CR4 ratio across all component six-digit industries, weighted by industry revenue. Sectors are listed in descending order according to their percentage point change in the CR4 ratio. Calculations use harmonized industry definitions and the primary sample of industries. See Section 2 for variable definitions, harmonization details, and sample restrictions.

Table 3: Two-digit sectors' revenue shares

Two-digit sector	NAICS	Revenue shares (%)							Δ C4 (1997 - 22)
		1997	2002	2007	2012	2017	2022	pp Δ	
Retail	44–45	21.64	20.55	18.98	18.39	19.16	19.82	-1.82	20.80
Wholesale	42	20.51	27.91	29.14	31.60	31.09	31.49	10.98	13.77
Transport & warehousing	48–49	2.78	2.55	3.16	3.17	3.45	3.73	0.95	10.19
Information	51	4.45	6.00	5.31	5.39	6.12	6.29	1.84	7.70
Administrative	56	2.52	2.71	2.83	2.68	3.36	3.48	0.96	3.67
Health care & social assistance	62	2.33	2.59	2.58	2.69	2.86	2.86	0.54	2.58
Other services	81	1.37	1.23	1.05	0.97	1.08	1.04	-0.33	2.04
Manufacturing	31–33	33.57	26.19	26.19	24.64	21.34	19.91	-13.66	0.97
Arts, entertain., & recreation	71	0.47	0.48	0.48	0.44	0.51	0.49	0.02	0.39
Prof., sci., & tech. services	54	3.67	4.09	4.36	4.63	5.16	5.32	1.65	0.13
Accom. & food services	72	3.08	3.02	3.04	3.08	3.63	3.40	0.32	-0.08
Utilities	22	3.62	2.68	2.89	2.32	2.23	2.18	-1.44	-1.25

Source: Authors' calculations from Economic Census concentration statistics

Notes: The table compares each two-digit sector's revenue in each Census year (calculated as the sum of revenue across 6-digit industries within that two-digit sector) to total revenue in the sample, as well as the total percentage point change (1997-2022). Following Table 2, sectors are listed in descending order according to their percentage point change in the CR4 ratio; the full-period-change in the CR4 ratio is also reported in the final column for reference. Calculations use harmonized industry definitions and the primary sample of industries. See Section 2 for variable definitions, harmonization details, and sample restrictions.

Table 4: Shift-share decomposition of weighted-average CR4 ratio

	ΔCR4	$\Delta \text{ within}$	$\Delta \text{ between}$	$\Delta \text{ cross}$
Full period				
1997-2022	7.03	6.44	-2.80	3.38
Subperiods				
1997-2002	4.85	4.51	-0.89	1.23
2002-2007	0.40	0.53	-0.49	0.35
2007-2012	0.51	0.06	-0.02	0.47
2012-2017	0.07	0.55	-0.88	0.40
2017-2022	1.20	1.12	-0.61	0.68

Source: Authors' calculations from Economic Census concentration statistics

Notes: This table decomposes the change in the revenue-weighted CR4 ratio across 6-digit industries in our baseline sample into its within-industry, between-industry, and cross components. Results are shown for the full period (1997-2022) and for subperiods defined by Census wave. See Section 2 for variable definitions, harmonization details, and sample restrictions.

Table 5: Distribution of 6-digit industries across CR4 bins over time

	CR4: 0-20	CR4: 20-40	CR4: 40-60	CR4: 60-80	CR4: 80-100
1997	247	222	168	55	15
2002	197	249	169	73	19
2007	191	250	171	66	29
2012	183	260	166	75	23
2017	176	255	177	78	21
2022	170	265	161	78	33

Source: Authors' calculations from Economic Census concentration statistics

Notes: This table records the number of 6-digit industries across CR4 concentration bins in each Economic Census year. Bin cutoffs are in percentage point terms. See Section 2 for variable definitions, harmonization details, and sample restrictions.

Table 6: Persistence of high-concentration status, linear probability models

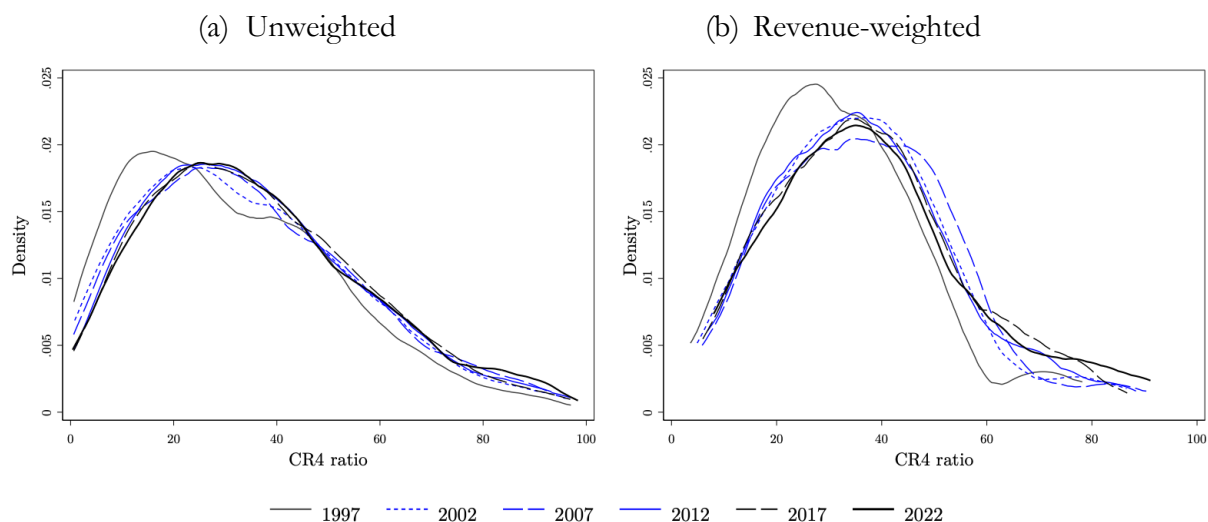
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	CR4>50	CR4>50	CR4>60	CR4>60	CR4>70	CR4>70	CR4>80	CR4>80
High CR4	0.783*** (0.0168)	0.785*** (0.0168)	0.783*** (0.0214)	0.784*** (0.0214)	0.782*** (0.0295)	0.783*** (0.0295)	0.725*** (0.0559)	0.726*** (0.0557)
Year controls	N	Y	N	Y	N	Y	N	Y
Observations	3535	3535	3535	3535	3535	3535	3535	3535
R-squared	0.592	0.593	0.569	0.569	0.564	0.565	0.452	0.454

Source: Authors' calculations from Economic Census concentration statistics

Notes: This table reports linear probability models estimating the persistence of high-concentration status. Each estimate regresses an indicator for whether a 6-digit industry has high-concentration status in one Economic Census wave on an indicator for if that industry's CR4 ratio exceeds the same threshold in the prior wave. Bin cutoffs are in percentage point terms. Standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. See Section 2 for variable definitions, harmonization details, and sample restrictions.

Figures:

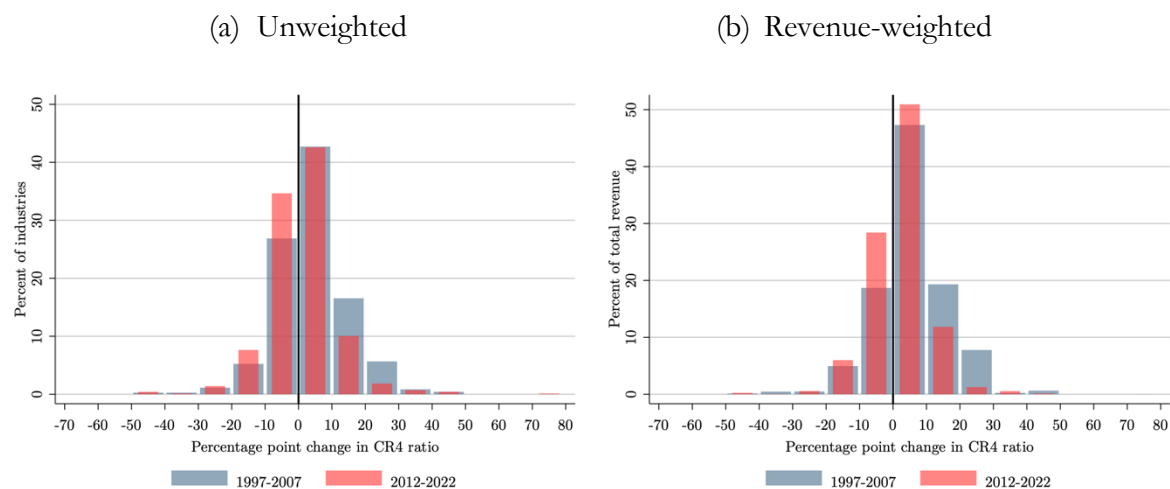
Figure 1: Unweighted and revenue-weighted distributions of CR4 ratios for 6-digit industries



Source: Authors' calculations from Economic Census concentration statistics

Notes: These figures compare unweighted and revenue-weighted kernel density estimates of CR4 ratios across 6-digit industries by Census wave (panels a and b, respectively). See Section 2 for variable definitions, harmonization details, and sample restrictions.

Figure 2: Unweighted and revenue-weighted distribution of changes in the CR4 ratio
Comparing 1997-2007 to 2012-2022 (changes weighted by initial industry revenue)

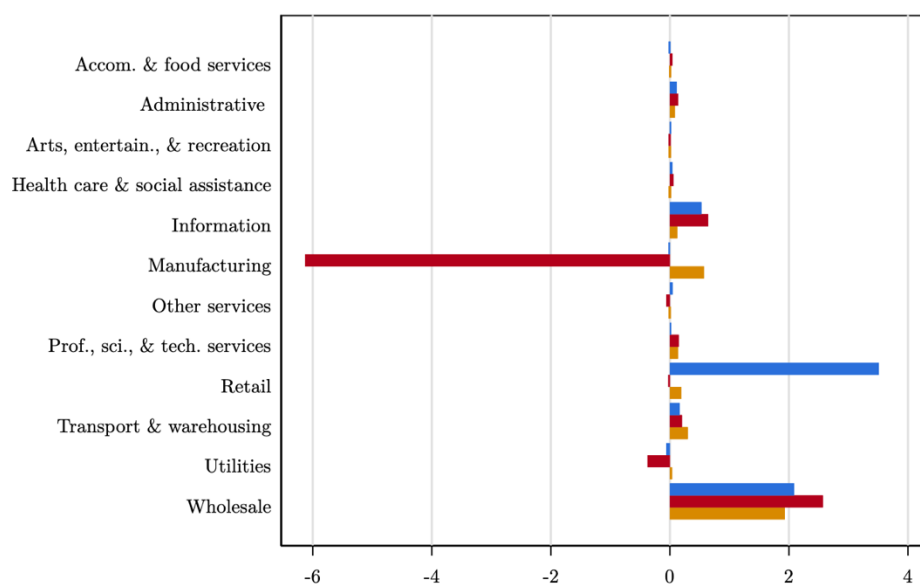


Source: Authors' calculations from Economic Census concentration statistics

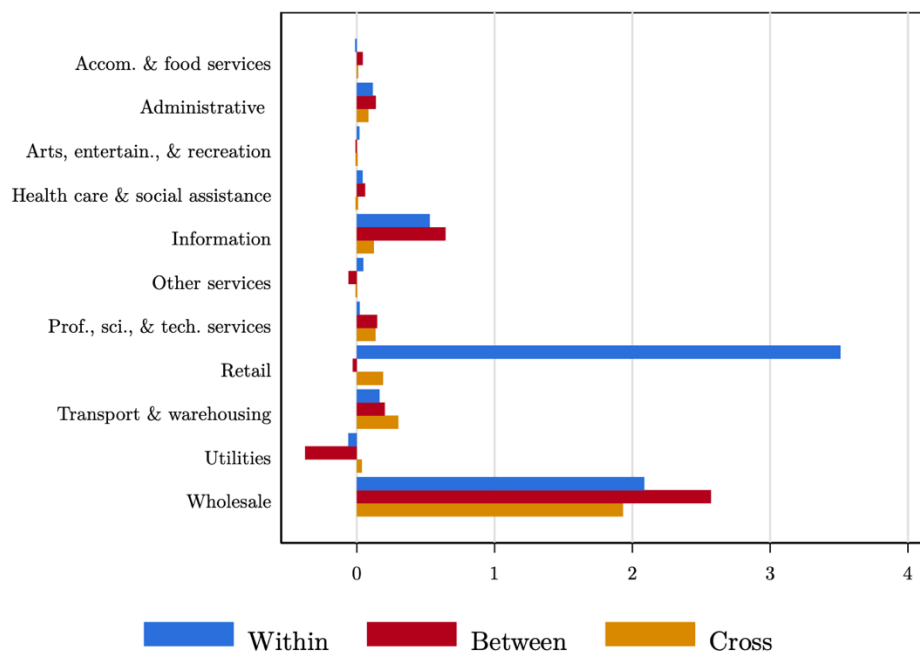
Notes: These figures show the distribution of the change in 6-digit industries' CR4 ratios for 1997-2007 and 2012-2022 in unweighted terms (panel a) and revenue-weighted terms (panel b). See Section 2 for variable definitions, harmonization details, and sample restrictions.

Figure 3: Contributions of 2-digit sectors to changes in weighted-average CR4 ratio, 1997-2022

(a) All 2-digit sectors



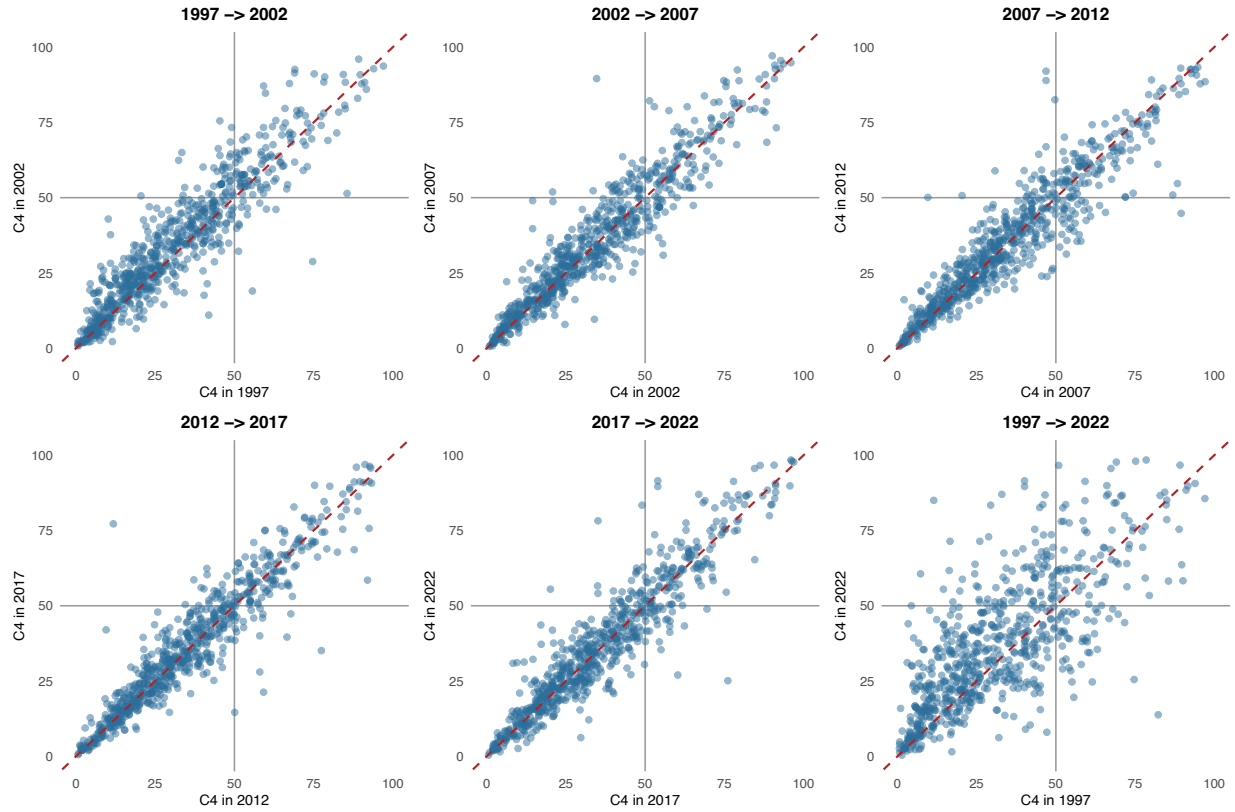
(a) Excluding manufacturing



Source: Authors' calculations from Economic Census concentration statistics

Notes: These figures show the sum of the within, between, and cross components across 6-digit industries within a sector between 1997 and 2022. The top panel includes all 2-digit sectors in our sample, and the bottom panel shows non-manufacturing sectors. See Section 2 for variable definitions, harmonization details, and sample restrictions.

Figure 4: Year-over-year persistence in the CR4 ratio



Source: Authors' calculations from Economic Census concentration statistics

Notes: This figure plots each industry's CR4 ratio in one Census wave against its CR4 ratio in the subsequent wave. It also plots a 45-degree line, along which points lie if their CR4 ratios do not change from one wave to the next. The first five panels compare adjacent Census waves, while the final panel describes the full period (1997-2022). See Section 2 for variable definitions, harmonization details, and sample restrictions.