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Business Concentration Around the World: 1900-2020

Based on BFI Working Paper No. 2026-13, "Business Concentration Around the World: 1900-2020," by Yueran Ma, University of Chicago; Mengdi Zhang, Northwestern University; and Kaspar Zimmermann, Kiel Institute and University of Hamburg

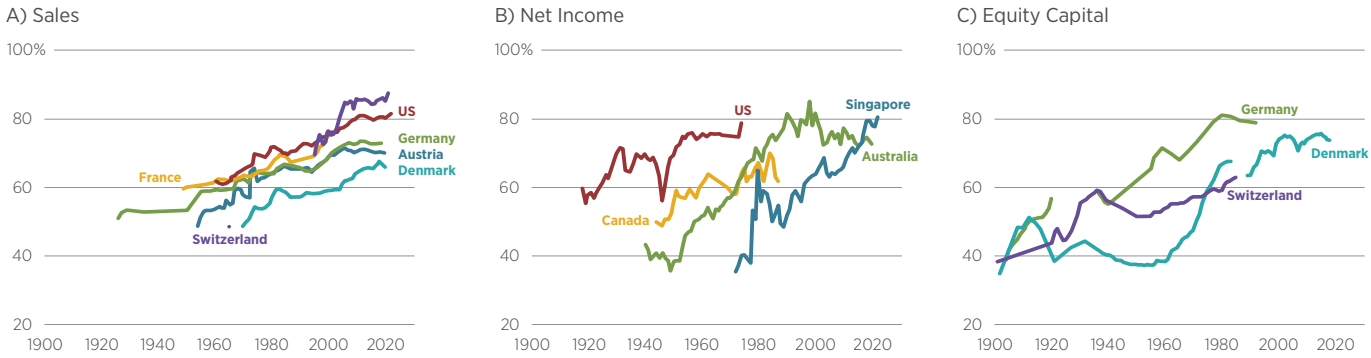
Sales, net income, and equity capital have concentrated among large firms globally over the past century, while employment concentration has been mostly stable as large firms often achieve greater scale without proportionally more workers. This rising dominance of large firms is pervasive and not limited to recent decades or to the United States.

The extent to which production can be accomplished through organizations and planning is one of the enduring themes in the history of economics. In The Wealth of Nations, Adam Smith envisioned a decentralized economy of small producers coordinated by the "invisible hand." That was 250 years ago. By 1937, Ronald Coase described the growing presence of large corporations as "islands of conscious power," formed in the "ocean of unconscious co-operation like lumps of butter coagulating in a pail of buttermilk."[1] This new research tracks firm size across multiple developed countries to reveal just how far this transformation has gone, and uncovers a puzzling pattern in how large firms have grown.

The authors assembled what may be the most comprehensive dataset on the firm size distribution, drawing primarily from official tax statistics and census data across market-based advanced economies. Their search focused on countries where they could find high-quality, long-run data showing the "organic" evolution of capitalism without heavy government intervention.

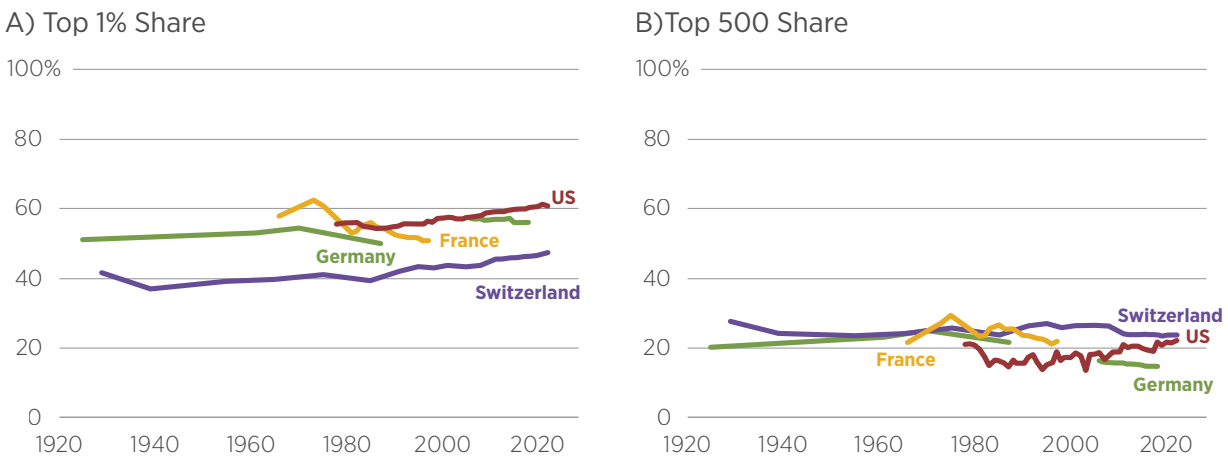
[1]Coase, Ronald H. 1937. "The Nature of the Firm." Economica, 4(16): 386–405.

Figure 1 · Top 1% Share by Sales, Net Income, and Equity Capital



Note: This figure shows the sales share of the top 1% firms by sales (left panel), the net income share of the top 1% firms by net income (middle panel), and the equity capital share of the top 1% firms by equity capital (right panel). Note the steady increase of top shares throughout the 20th century in all countries with available data and with all three size measures. These trends around the world also date back much further than the recent decades.

Figure 2 · Top Share by Employment



Note: This figure shows the employment share of the top 1% firms by employment in the aggregate in Panel A, and the employment share of the top 500 firms by employment in the aggregate in Panel B. Note that employment concentration is largely stable in the aggregate. It increased slightly in Germany in the early decades and in the U.S. in recent decades and decreased slightly in France between the 1970s and 1990s.

The data come from European countries including Germany, Austria, France, Switzerland, Denmark, and the United Kingdom, plus Canada, Australia, Singapore, and South Korea. Some datasets stretch back to 1901, and all countries have data from before the mid-1970s, ensuring the trends are not just shaped by recent developments.

The authors' findings reveal persistent increases in concentration across time and space:

- Sales Concentration: In countries with available data (Germany, Austria, France, Switzerland, Denmark, and the United States), the top 1% of firms by sales typically controlled around 50% of economy-wide sales in the 1950s. By the 2010s, this had risen to approximately 80%. The patterns were remarkably similar between the United States and other countries, suggesting this is a pervasive feature of advanced capitalism rather than something unique to American conditions.
- Net Income Concentration: Data from Australia, Canada, and the United States show the top 1% share of net income started around 50% in the 1940s, increased to roughly 60% by the 1980s, and reached about 80% by 2000. Singapore showed similar trends, just offset by a few decades as its economy developed later.
- Capital Concentration: Data from Germany, Denmark, and Switzerland show the top 1% share of equity capital started at around 40% in the early 1900s, climbed to approximately 60% by the 1980s, and exceeded 70% in later years.
- These trends held whether researchers measured the top 1%, the top 500 firms, or adjusted for country size by looking at the top 100 firms per million population.

The authors also uncovered important variations across industries. In Germany, the most comprehensive industry-level data showed the following:

- Manufacturing: The rise of large firms was stronger in the early 20th century, with top shares increasing less dramatically since the 1980s, a pattern also observed in the United States and United Kingdom.
- Services and Retail/Wholesale Trade: Concentration increased more substantially in recent decades, representing a different trajectory from manufacturing.

In the United Kingdom, the share of the 100 largest manufacturing enterprises rose substantially from 1909 until the 1980s, before leveling off. South Korea, where manufacturing development came later, saw the top 100 share in manufacturing surge from around 20% in the early 1970s to approximately 45% by the early 2010s. Even detailed concentration ratios at the industry level (such as the share controlled by the top 10 or top 20 firms in specific manufacturing sectors) showed increases in both Germany and Australia wherever consistent data were available.

However, when it comes to employment, things take a somewhat surprising turn. Despite large firms capturing ever-larger shares of sales, profits, and capital, their share of total employment has remained relatively stable at roughly 50% throughout the 20th century.

The researchers compiled employment data from Germany and Switzerland dating back to the 1920s, along with data from France, and industry-specific information from the United Kingdom, Australia, and South Korea. They also uncovered US employment data from Census Enterprise Statistics publications with consistent coverage for manufacturing and retail/wholesale trade since 1958. They find that:

Figure 3 · Top 10 US Companies by Sales, Then and Now

Ranking	1955	1990	2025
1	General Motors	General Motors	Walmart
2	Standard Oil (New Jersey)	Exxon	Amazon
3	Ford Motor	Ford Motor	UnitedHealth
4	AT&T	IBM	Apple
5	Great Atlantic & Pacific Tea	Mobil	Berkshire Hathaway
6	US Steel	General Electric	CVS Health
7	General Electric	AT&T	Exxon Mobil
8	Sears Roebuck	Sears Roebuck	Alphabet
9	Swift	Philip Morris	McKesson
10	Chrysler	Texaco	Cencora

> This divergence between sales/capital concentration and employment concentration presents a genuine puzzle … When firms expand, they should increase all inputs proportionally.

- In manufacturing and the aggregate economy, employment concentration showed remarkable stability. In some cases, like France and UK manufacturing, it even declined slightly since the 1980s.
- The major exception was retail and wholesale trade, where employment concentration increased over the long run with magnitudes like the increases in sales concentration, in countries where this data was available.

This divergence between sales/capital concentration and employment concentration presents a genuine puzzle. In standard production models, where capital and labor complement each other, concentration across all these measures should move together. When firms expand, they should increase all inputs proportionally.

What explains this theoretical puzzle? The researchers propose automation as a likely candidate. For example, when the relative price of capital has declined over time (equivalently, as capital productivity has risen), large firms can have stronger incentives to automate. Large firms may be more inclined to pay the fixed costs of automation, allowing them to expand sales and capital without proportionally increasing their workforce.

This mechanism works especially well in manufacturing, where automation opportunities are abundant. In industries where automation remains challenging—like retail and wholesale trade—the standard complementarity between capital and labor means that high-productivity firms benefit from cheaper capital but still need to hire more workers, leading both sales and employment concentration to rise together.

Supporting this possibility, the researchers present evidence from US Bureau of Economic Analysis data since the 1940s, showing that the capital-to-labor ratio has increased far more dramatically in manufacturing than in trade, exactly what the automation hypothesis would predict. The authors also study alternative explanations (rising markups and outsourcing) but find that they fall short of fully explaining the evidence. As for globalization and trade, the authors acknowledge that international trade could affect domestic firm size distributions, but the data reveal strong rising concentration well before the modern era of globalization, and the phenomenon appears across countries with different trade regimes.

Understanding the evolution of firm size distribution matters for more than academic reasons, including the following policy-related issues:

- Understanding Production: Data about top firm shares by sales, capital, and employment, which can be estimated reliably over long periods, reveal fundamental changes in how production is organized and what production functions look like in practice.
- Macroeconomic Consequences: As the firm size distribution becomes more skewed, large firms

play an increasingly important role in aggregate outcomes. Shocks and frictions affecting these giants have stronger ripple effects throughout the economy, as recent research on "granular" macroeconomic fluctuations has demonstrated.

- Corporate Governance: The increasing economic influence of large enterprises makes their governance more consequential for society.

Importantly, the authors are careful to note what their study is *not* about: They are not measuring competition or market power. As has been well-established in economics, concentration is not a reliable indicator of market power; highly concentrated industries can still be fiercely competitive. What the authors are doing is documenting *how* production is organized. Put another way, they are not adjudicating whether this transformation is beneficial or harmful; rather, they are documenting and analyzing this transformation.

Circling back to Adam Smith, this research reveals that Smith's vision of an economy coordinated by small producers and the invisible hand has been substantially displaced. Across the developed world, the "visible hand"[2] of large corporations now controls an unprecedented and growing share of sales, profits, and capital, though not employment. As this century-long transformation continues, understanding both its drivers and its consequences becomes increasingly vital if we hope to understand how modern economies function.

Superstars have a super advantage

A recent paper (Superstar Firms Through the Generations, Ma, et al.) analyzed superstar firms in the United States, or that small set of top companies that account for a large share of output. This work reveals that new technologies that exhibit economies of scale, that confer low adoption costs for new entrants, and that require organizational learning, give rise to superstar firms for a long time. These firms enjoy systematic advantages relative to both firms that came before and potential entrants thereafter. That said, individual superstars keep churning due to idiosyncratic shocks.

[2]Chandler, Alfred D. 1977. The Visible Hand. Harvard University Press.

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