



Are Markets Too Concentrated?

Industries are increasingly concentrated in the hands of fewer firms. But is that a bad thing?

By Tim Sablik

In its heyday in the late 19th and early 20th centuries, Standard Oil Company and Trust controlled as much as 95 percent of the oil refining business in the United States. Domination of markets by large firms like Standard Oil was emblematic of the so-called Gilded Age, and it sparked an antitrust movement. Ultimately, in 1911 the U.S. Supreme Court would order Standard Oil broken up into more than 30 companies.

Today, many sectors of the economy exhibit similar levels of concentration. Google accounts for more than 90 percent of all search traffic. Between them, Google and Apple produce the operating systems that run on nearly 99 percent of all smartphones. Just four companies — Verizon, AT&T, Sprint, and T-Mobile — provide 94 percent of U.S. wireless services. And the five largest banks in America control nearly half of all bank assets in the country.

In response to rising concentration in these and other industries (see chart), commentators and politicians from both sides of the political spectrum have expressed alarm. William Galston and Clara Hendrickson of the Brookings Institution wrote in a January report, “In 1954, the top 60 firms accounted for less than 20 percent of GDP. Now, just the top 20 firms account for more than 20 percent.” And a 2017 article in the *American Economic Review* by David Autor, Christina Patterson, and John Van Reenen of the Massachusetts Institute of Technology; David Dorn of the University of Zurich; and Lawrence Katz of Harvard University reported that concentration increased between 1982 and 2012 in six industries accounting for four-fifths of private sector employment.

If rising market concentration means there is less competition, it could have a variety of economic consequences, from higher prices to lower productivity. As the Fed and other policymakers debate causes of macroeconomic puzzles like the recent productivity slowdown and slow wage growth, some economists have argued that rising concentration levels hold the key to explaining these mysteries.

Efficiency vs. Market Power

For much of the first half of the 20th century, it was generally assumed that concentration allowed firms to exercise market power. In the 1950s, University of California, Berkeley economist Joe Bain developed models that directly related industry concentration and competition. As markets became more concentrated, Bain reasoned, surviving firms would naturally collude to keep out competitors and increase prices. Courts and agencies during this time took a similar view, ruling against mergers that would increase a firm's market share beyond a certain threshold.

In the 1970s, economists and legal scholars from the University of Chicago began to challenge the idea that concentration should necessarily be viewed with great suspicion. They noted that concentration could rise simply from efficient firms outperforming their rivals and increasing their market shares. In his highly influential 1978 book, *The Antitrust Paradox*, Robert Bork argued that mergers often benefited society through lower prices and higher productivity, which antitrust policy should take into account. (For more on this history, see "A Matter of Antitrust," *Region Focus*, Summer 2009.)

Several recent studies have attempted to determine whether the current trend of rising concentration is due to the dominance of more efficient firms or a sign of greater market power. The article by Autor, Dorn, Katz, Patterson, and Van Reenen lends support to the Chicago view, finding that the industries that have become more concentrated since the 1980s have also been the most productive. They argue that the economy has become increasingly concentrated in the hands of "superstar firms," which are more efficient than their rivals.

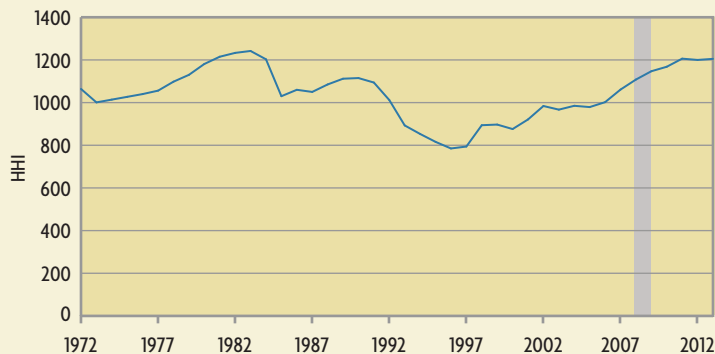
The tech sector in particular may be prone to concentration driven by efficiency. Platforms for search or social media, for example, become more valuable the more people use them. A social network, like a phone network, with only two people on it is much less valuable than one with millions of users. These network effects and scale economies naturally incentivize firms to cultivate the biggest platforms — one-stop shops, with the winning firm taking all, or most, of the market. Some economists worry these features may limit the ability of new firms to contest the market share of incumbents. (See, for example, "Interview: Jean Tirole," *Econ Focus*, Fourth Quarter 2017.)

Of course, there are exceptions. Numerous online firms that once seemed unstoppable have since ceded their dominant position to competitors. America Online, eBay, and MySpace have given way to Google, Amazon, Facebook, and Twitter.

"It's easy to say that because there are scale economies in these businesses there can never be competition," says Richard Schmalensee, an economist at the Massachusetts Institute of Technology who has written extensively on the industrial organization of platforms. "But there are scale economies in a lot of businesses. They limit the extent of competition, but they don't wipe it out."

Market Concentration on the Rise

Aggregate Herfindahl-Hirschman concentration index for all public firms

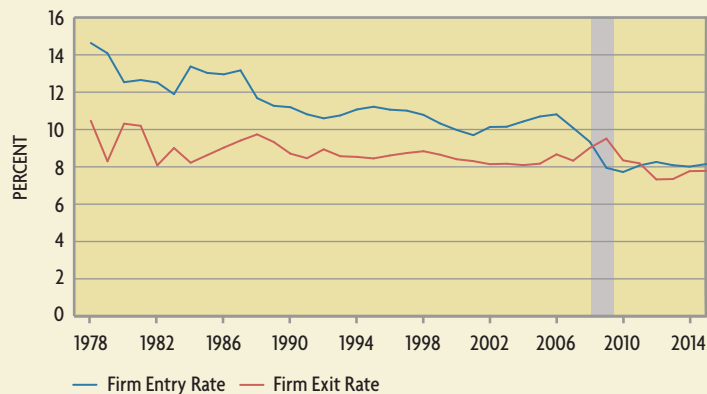


NOTE: The aggregate Herfindahl-Hirschman Index (HHI) is a weighted average of the HHIs in the United States for all industries. The HHI, in turn, is a common measure of concentration, constructed by summing the squared total sales for firms in an industry and dividing by the total number of firms in that industry. Shaded region indicates the Great Recession. Data through 2013.

SOURCE: Gustavo Grullon, Yelena Larkin, and Roni Michaely. "Are U.S. Industries Becoming More Concentrated?" Manuscript, April 2017.

Fewer New Firms Being Born

Entry and exit rates for firms



NOTE: Shaded region indicates the Great Recession. Data through 2015.

SOURCE: U.S. Census Bureau Business Dynamics Statistics and author's calculations.

On the other hand, some researchers have argued that this time may be different. Entry rates for new firms have fallen in recent years, perhaps signaling that challengers are finding it increasingly difficult to gain a foothold. (See chart.) This could be the result of anticompetitive behavior on the part of incumbent firms. Last year, European Union antitrust authorities hit Google with a record-setting 2.42 billion euro fine for allegedly manipulating its search engine results to favor its own services over those of competitors.

"You don't want to inhibit firms from taking advantage of economies of scale," says Schmalensee. "On the other hand, you don't want those economies to get baked into monopoly positions that are defended by unfair means."

Technology, and the patents on that technology, may be another way incumbents create barriers for challengers. In

Rising market concentration may have a negative effect on innovation and economic dynamism.

a 2017 working paper, Gustavo Grullon of Rice University, Yelena Larkin of York University, and Roni Michaely of Cornell University found that since 2000, firms in concentrated markets have had more patents than firms in less concentrated ones. Those patents held by firms in concentrated markets also tended to be the most valuable, representing an expensive hurdle to new firms seeking to enter those markets.

Price and Wage Effect

Prices may provide another signal of how much competition exists in concentrated markets. Firms that are able to protect themselves from competitors have more power to raise prices above marginal costs with less fear of being undercut. In a perfectly competitive market, such markups would induce new firms to enter the market and offer lower prices, eventually bringing markups closer to zero.

Actually measuring markups is tricky, however. It requires some knowledge of firms' underlying costs, which are typically not fully available to researchers. Researchers must infer marginal costs from total cost data. Additionally, in order to analyze markups across an entire industry, economists may assume that all firms in that industry face the same marginal cost structure. Depending on how realistic that assumption is, it may skew the results.

Given these challenges, it is perhaps unsurprising that economists have found conflicting evidence on markups. A 2018 working paper by Jan De Loecker of Princeton University and Jan Eeckhout of University College London and Universitat Pompeu Fabra Barcelona found that markups have risen substantially since 1980 — from 18 percent above cost to 67 percent above cost today. They argue this increase is the result of rising market power.

On the other hand, higher markups could be driven by changing costs. In a recent working paper, James Traina of the University of Chicago found that the growth in markups reported by De Loecker and Eeckhout largely disappears after accounting for the increase in marketing costs as a share of firms' total operational costs during the same period. Thus, it is not entirely clear whether rising market concentration today is allowing firms to exercise market power and charge higher markups.

Firms in concentrated industries could also exercise market power over the inputs to their production, such as labor. In highly concentrated markets, firms might collude to reduce competition for workers and thus pay lower wages. In 2010, the Department of Justice investigated claims that Apple, Google, Intel, Intuit, Pixar, and Adobe

had entered into agreements not to poach each other's employees, suppressing competition for tech workers. The firms agreed to end the practice as part of a settlement.

Even without collusion, firms with greater market power may be able to pay lower wages. A 2018 National Bureau of Economic Research working paper by Efraim Benmelech of Northwestern University, Nittai Bergman of Tel Aviv University, and Hyunseob Kim of Cornell University found that higher industry concentration is associated with lower wages at the local level, and this link has strengthened since 1981.

Efficiency gains could also explain these trends. Autor and his co-authors argue that "superstar" firms in concentrated industries rely on fewer workers due to the firms' higher productivity. This would reduce the share of economic output that accrues to workers, slowing overall wage growth. (See "Will America Get a Raise?" *Econ Focus*, First Quarter 2016.)

Declining Dynamism

Higher prices and lower wages are just two potential costs of rising concentration. Policymakers at the Fed are also interested in the long-term growth potential of the economy, and some economists have argued that rising concentration may have a negative effect on innovation and economic dynamism.

Harvard University economist Joseph Schumpeter famously coined the phrase "creative destruction" to describe the process whereby competition from innovative new entrants drives productivity growth. In theory, nimble and inventive startups will outperform and replace stagnant and less efficient incumbent firms, reallocating workers to more productive uses. Research suggests that this process has slowed in recent decades. Young firms, which have historically accounted for a significant share of job creation, are employing a shrinking share of the labor force.

On the other hand, some economists have disputed the idea that creative destruction is what drives economic growth. In a 2018 paper, Chang-Tai Hsieh of the University of Chicago and Peter Klenow of Stanford University found that innovation and productivity gains largely come from incumbent firms improving their own processes and products rather than from dynamic startups. Under this view, increased concentration and falling startup rates might not be a concern, as long as incumbents possess the right incentives to continue innovating. The effect of competition on incentives to invest and innovate is an open question, however.

"One of the potential issues with innovation is that you pay the cost today, but if you can't protect your innovation, then you won't reap the benefits in the future," says Thomas Philippon of New York University. This may be particularly true in industries where initial research and development costs are high but the cost of replication is low, such as in the pharmaceutical industry.

The United States and other governments award patents — temporary monopolies — to incentivize firms in such industries to innovate. But it is also possible that firms with strong market power will choose to innovate less, preferring instead to reap the rewards from maintaining high prices on their existing products.

The two theories aren't mutually exclusive. Economists have suggested that the relationship between competition and innovation may follow an inverse U-shaped pattern. At low levels of competition, more competition incentivizes firms to innovate. But if competition levels are already high, innovative firms are more likely to be imitated by competitors, diminishing incentives to innovate. The question is, where do firms in concentrated industries today fall on the curve?

"For most industries in the United States, it looks like we are the side of the curve where more competition leads to more innovation, not less," says Philippon.

Firms' investment levels have been low since the early 2000s relative to their profitability, according to recent work by Philippon and Germán Gutiérrez, his colleague at New York University. After accounting for market conditions, such as lingering scars from the Great Recession, they found that firms in more concentrated industries invested less than those in more competitive markets. They argue this is due to lack of competition.

"When industry leaders are challenged, they actually invest more, both in physical assets as well as intangibles like intellectual property," says Philippon. "I'm sure you can find examples where competition has discouraged innovation, but I think we are far from that today."

No Easy Solutions

Many signs point to rising industry concentration in recent years. What that means for the economy is less clear. Some evidence suggests that rising concentration levels are tied to weakening competition, which is likely to have negative effects on consumer welfare and economic productivity. Other work suggests that efficiency is driving firm consolidation, which is beneficial for consumers. To complicate matters further, both forces could be happening at the same time depending on the industry, making it difficult to disentangle effects in the aggregate economy.

READINGS

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De Loecker, Jan, and Jan Eeckhout. "The Rise of Market Power and the Macroeconomic Implications." National Bureau of Economic Research Working Paper No. 23687, August 2017.

Grullon, Gustavo, Yelena Larkin, and Roni Michaely. "Are U.S. Industries Becoming More Concentrated?" Manuscript, August 2017.

Context also matters for assessing concentration. Two localities can have similar levels of concentration in an industry sector but very different levels of competition. For example, a 2016 study of payment choices in the Fifth District by Richmond Fed economists Zhu Wang and Alexander Wolman found that having fewer banks in a rural setting corresponded with lower card and higher cash usage by customers, suggesting banking services were expensive and not competitive. But they found the opposite in metropolitan areas. Customers of banks in highly concentrated urban markets had higher card adoption. For rural banks, concentration appeared to be a sign of market power, while for metropolitan banks it reflected consolidation driven by efficiency gains.

Still, many have called for more vigorous antitrust enforcement or new laws to address the rise in industry concentration. Carl Bogus, a professor of law at Roger Williams University, wrote in a 2015 article that antitrust law prior to the rise of the University of Chicago view was concerned not only with the economic consequences of large firms, but also with the political consequences as well. Bogus argues for using antitrust law to curtail corporate political power, even if doing so may result in some economic inefficiencies.

Others are skeptical that antitrust is the right tool for this job. Carl Shapiro of the University of California, Berkeley, who served in the Antitrust Division of the Department of Justice under President Barack Obama, has written that he supports vigorous antitrust enforcement but that other policies, such as campaign finance reform, are better suited to addressing concerns about corporate political power.

More than a century after the passage of the 1890 Sherman Act, which established American federal antitrust law, it remains a challenge for policymakers to balance concerns about large firms wielding too much market power with a desire not to punish companies that have succeeded on their own merits.

"You worry about a firm that has market power, ceases to innovate, and just charges high prices," says Schmalensee. "But competition sometimes has winners, and one of the worst things you can do as a policymaker is pick on the winners." **EF**

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Traina, James. "Is Aggregate Market Power Increasing? Production Trends Using Financial Statements." Chicago Booth Stigler Center for the Study of the Economy and the State New Working Paper Series No. 17, February 2018.