

Monopoly Myths: Is Concentration Leading to Fewer Start-Ups?

ROBERT D. ATKINSON AND CALEB FOOTE | AUGUST 2020

Many say the decline in new business formation over the past 30 years has been caused by increased monopoly. But there is no statistical relationship between start-up creation and change in concentration by industry; high-growth start-up activity is healthy.

KEY TAKEAWAYS

- Looking at the number of start-ups as a share of all firms in their industries, the relationship between the change in concentration and the number of start-ups is positive, but small. More concentration thus is associated with more start-ups.
- The net decline in start-ups is all in the mom-and-pop retail sector, while the rate of high-growth entrepreneurial start-up creation is healthy.
- Retail start-ups declined not because large retailers have abused their market power, but because they have done a better job at providing consumers with what they want.
- This, in turn, has led to lower prices, more choices, and higher retail wages and sector productivity.

INTRODUCTION

In the last few years, a number of pundits, advocates, and journalists have argued that market concentration has grown in the United States and that this has caused a precipitous decline in the number of business start-ups. In this narrative, “monopoly” is a sclerotic scourge, robbing the economy of its traditional dynamism and leading to a host of problems, including less innovation and slower job growth. As the analysis in this paper shows, these claims are simply wrong.

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A number of op-eds, blogs, and academic papers have alleged that the decline in the number of new business start-ups over the past 30 years can be attributed to too much market power in too many industries. Many journalists, pundits, and policymakers have responded by calling for more aggressive antitrust enforcement, including retroactively unwinding past mergers.

What is perhaps most surprising about this argument is that it is based on a simple assertion of core correlation. Concentration has increased while start-ups have fallen: Therefore, concentration must be responsible for the fall—and the solution must be tougher antitrust laws and enforcement.

There is no statistical relationship between changes in concentration and changes in new firm formation. It's time to consign the notion that the decline in start-ups is due to monopoly to the urban myths file.

However, as any student who has taken statistics should know, correlation does not imply causation. In this case, not only has concentration not actually increased very much, but the statistical correlation between change in new firm formation by industries at the four-digit North American Industry Classification System (NAICS) code level and change in concentration is essentially zero. In other words, there is no statistical relationship between changes in concentration and changes in new firm formation.

Moreover, all the net decline in new firm formation is in one major sector—retail—wherein the results of increasing retail firm size have been superior productivity growth, higher wages for workers in larger stores, and significant consumer benefit in the form of lower prices and broader selection. And when it come to the most important kinds of start-ups—potentially high-growth start-ups, especially in technology sectors—there has been no decline.

As such, it's time to consign the notion that the decline in start-ups is due to monopoly to the urban myths file.

THE ARGUMENT THAT START-UPS ARE DOWN, AND INCREASING CONCENTRATION IS THE CAUSE

With the long and tepid recovery from the great recession of 2008–2009 emerged a cottage industry in identifying the reasons for slow growth. And the answer that a growing number of economic pundits latched onto was the decline in new business formation. Until the COVID-19 crisis, it was almost impossible to read a business publication without being bombarded by warnings that new firms were starting at anemically low rates, which was keeping America's growth in the slow lane.

An article in *Inc.* magazine hyperbolically warns that “American Entrepreneurship Is Actually Vanishing.”¹ *Quartz* titled one of its articles “The US start-up is disappearing.”² And the B Schools blog wrote, “The American startup is *dying*.”³ Venture capitalists Seth London and Bradley Tusk lamented, “Start-ups are the sinew of the American economy, but the uncomfortable reality is that American businesses are dying.”⁴

Pundits tell us this decline is a crisis. Economists Ian Hathaway and Robert Litan have noted that the U.S. business sector is getting “old and fat,” and “nothing less than the future welfare of America and its citizens is at stake.”⁵ Gallup CEO Jim Clifton warned that “this economy is never truly coming back unless we reverse the birth and death trends of American businesses.” And John Dearie, executive vice president of the Financial Services Forum, has signaled that “this is nothing short of a national emergency.”⁶

IT MUST BE CONCENTRATION

So what is the cause of this national emergency? Pundits, advocates, and experts claim it must be growing levels of industry concentration. An *Inc.* article asserts: “It's the big guys [that are] soaking up the oxygen.”⁷ And neo-Brandeisian advocates—activists who oppose large corporations—have latched onto this decline to peddle their favorite explanation: monopoly. Barry Lynn and Lena Khan have argued: “The single biggest factor driving down entrepreneurship is precisely the radical concentration of power we have seen not only in the banking industry but throughout the U.S. economy over the last thirty years.”⁸ Even worse, Stacy Mitchell of the Institute for Local Self-Reliance wrote, “The decline of small business and entrepreneurship is owed, in significant part, to anticompetitive behavior by dominant corporations which routinely use their size and market power to undermine and exclude their smaller rivals.”⁹ Roosevelt Institute economist Marshall Steinbaum wrote, “You've got rising market power. In general, that makes it hard for new businesses to compete with incumbents. Market power is the story that explains everything.”¹⁰

Many in the media agree. In his *Atlantic* article, “America's Monopoly Problem: How Big Business Jammed the Wheels of Innovation,” Derek Thompson wrote that the decline “has coincided with the rise of extraordinarily large and profitable firms that look like the monopolies and oligopolies of the 19th century.”¹¹ *New York Times* economic columnist Eduardo Porter wrote that the decline in start-ups “is all about the decline of competition.”¹²

Taking a page from former Obama administration chief of staff Rahm Emanuel, who famously advised to “never want a serious crisis go to waste,” he and others have argued that only a radical antitrust enforcement agenda will open up space for start-ups—and the U.S. economy—to flourish again.¹³

WHAT IS REALLY GOING ON WITH START-UPS?

There is no doubt start-ups have fallen. Of the 259 four-digit NAICS code industries with relevant data, 206 saw fewer start-ups in 2016 than in 2006, and only 53 saw increases.¹⁴ Overall, the number of start-ups grew from 523,720 in 1997 to 564,888 in 2006, but fell to 438,867 in 2016—a decline of 84,853 over two decades.¹⁵ These numbers are even starker given the United States has grown, and with it the number of businesses that exist and workers who could create start-ups. In fact, establishments grew 14 percent from 1997 to 2016, from 6 million to 6.7 million in 2006 and to 6.9 million in 2016. New start-ups as a share of all establishments fell from 12.9 percent in 1997 to 12.3 percent in 2006 to only 10.2 percent in 2016.

And concentration has increased, although by less than many people imagine.¹⁶ First, according to data from the Census Bureau's Economic Census, in about 40 percent of industries at the 4-digit NAICS code level concentration has not been increasing, and most of the remaining 60 percent are substantially unconcentrated, with their top 8 firms commanding less than 30 percent of their respective markets. So, on the face of it, increasing concentration does not seem sizeable enough to affect the rate of start-ups.¹⁷

Moreover, there have been almost no studies that empirically examine the relationship between these two things. Rather, neo-Brandeisians simply assert that increasing concentration is the cause. The argument modern champions of the antimonopolist tradition make is simple: Concentration has gone up and start-ups have gone down, so the former has caused the latter. As a Brookings Hamilton Project report describes it: “A range of data show both increases in concentration in various industries and a decline in the number and activity of start-ups.”¹⁸ But this is a bit like implying the number of movies Nicholas Cage appears in is causally correlated to the number of people who drown by falling into a pool each year.¹⁹ These two datasets are in fact correlated, but neither causes the other. Indeed, as one learns in any introductory statistics class, correlation does not mean causation.

To actually understand the relationship, it's important to look at concentration and start-ups by industry. In looking at the relationship between the change in the rate of new establishments between 2006 and 2016 and the rate of change in concentration ratios from 2007 to 2012, there is essentially no relationship. The more-accurate measure would be change in new firms, rather than establishments.²⁰ But the Census Bureau only reports on establishments. There is, however, a close relationship between new firms and new entablements, with about 33 percent more establishments than firms. Moreover, for concentration, the Census Bureau only reports data every five years, with the latest available being through 2012 (2017 data has not yet been released).

When looking at the more-accurate measure of change in the number of start-ups as a share of total firms in the industry, the relationship between change in concentration and start-ups is actually positive, but still very small. In other words, more concentration leads to more start-ups.

When looking at the relationship between new establishments as a share of total establishments in a particular year at the four-digit NAICS code level and the change in industrial concentration in the industry, there is no relationship. When looking at the change in the C4 ratio (the market

share of an industry by the largest 4 firms) and the change in total number of start-ups for 257 industries, the correlation coefficient is in fact negative (more concentration leads to fewer start-ups), but very small: -0.05. When looking at the more-accurate measure of change in the number of start-ups as a share of total firms in the industry, the relationship between change in concentration and start-ups is actually positive, but still very small: 0.05. In other words, more concentration leads to more start-ups. The relationship with change in the C8 ratio is similar: -0.04 for raw number of start-ups and 0.04 for percent change. These relationships are so miniscule that none are anywhere close to being statistically significant.²¹ When using a regression equation to measure the relationship, it is even weaker: around 0. When outliers are excluded (industries with change in start-ups that are beyond 1.5 times the interquartile range), the results are essentially the same: absolutely no correlation.

This is why there are many industries wherein both concentration ratios and start-ups have fallen. Between 2006 and 2016, in the depository credit industry (banks), the C4 ratio fell 5.7 percent, the C8 ratio fell 5.2 percent, and the C20 ratio fell 5.4 percent, yet start-ups fell 72 percent. The C4 ratio in the alumina and aluminum production and processing industry fell 12.3 percent, yet start-ups fell 44 percent. The C4 ratio fell 35 percent in the computer and peripheral equipment manufacturing sector, while start-ups fell 40 percent.

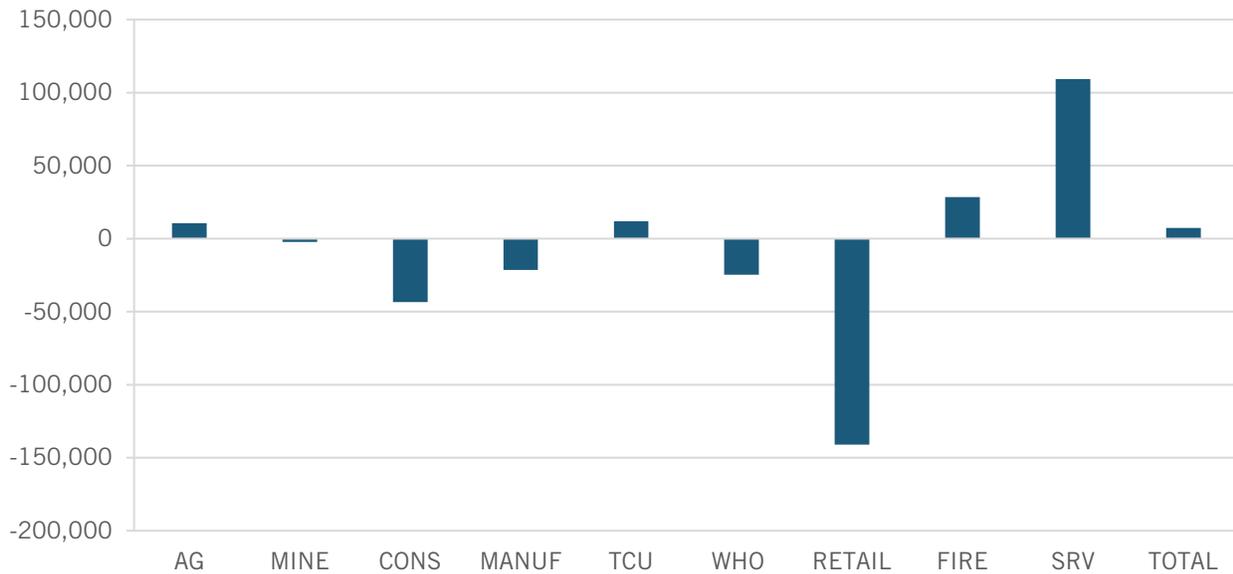
In contrast, there are numerous industries wherein both start-ups and concentration increased over the same time period. Start-ups increased 38 percent in the electronic shopping and mail-order houses industry, while the C4 ratio increased 9 percent. Beverage manufacturing start-ups increased 36 percent, while the C4 ratio increased 9.4 percent. And health- and personal-care store start-ups increased 12 percent, while the C4 ratio increased 3.6 percent.

THE CASE OF RETAIL TRADE

In 2016, two-thirds of all start-ups were in two major sectors: retail and services. This is consistent with the lion's share of start-ups being in lifestyle businesses, not entrepreneurial growth businesses. These two sectors are also the easiest in which to start a business because they have lower start-up costs and less technical skill requirements than sectors such as construction, manufacturing, and banking and insurance.

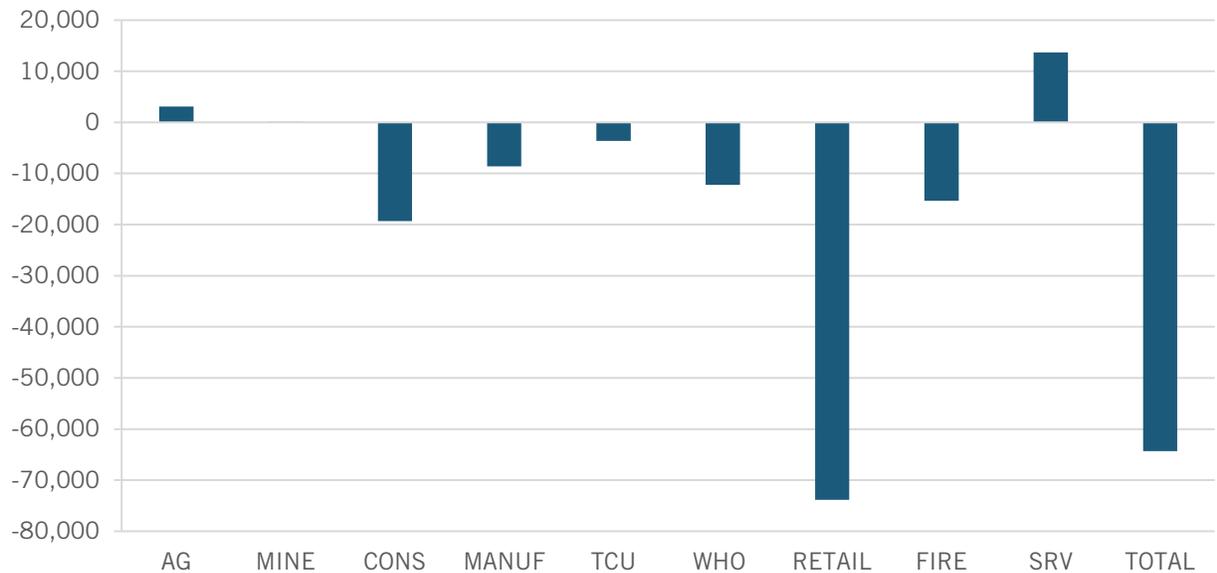
All of the decline in U.S. start-ups has been in the retail sector. From 1977 to 2016, total start-ups grew by 7,229. Yet retail start-ups fell by 140,985, almost two-thirds the original level. Leaving aside retail, total start-ups actually increased by 148,214. (See figure 1.) There was thus no crisis in start-ups overall, but a fall in retail, which, as we will see, was not a crisis but an opportunity.

Figure 1: Change in number of start-ups by major industry, 1977–2016²²



The change from 2003 to 2016 is similar. (See figure 2.) However, while total start-ups fell by 64,336, retail start-ups fell even more, by 73,841. Leaving out declines in construction and finance, and insurance and real estate—which both suffered the effects of the real estate-induced great recession—overall start-ups were up by 44,125.

Figure 2: Change in number of start-ups by major industry, 2003–2016²³



The rate of entry of new retail establishments also fell dramatically from almost 20 percent in 1977 to just above 6 percent in 2016. During this period, the average size of retail firms more than doubled from 14 to 29 workers. However, the average establishment size increased less, from 11 to 18 workers, suggesting multi-establishment firms grew faster. In fact, while the number of retail firms declined by 8 percent, the number of retail establishments increased by 12 percent.

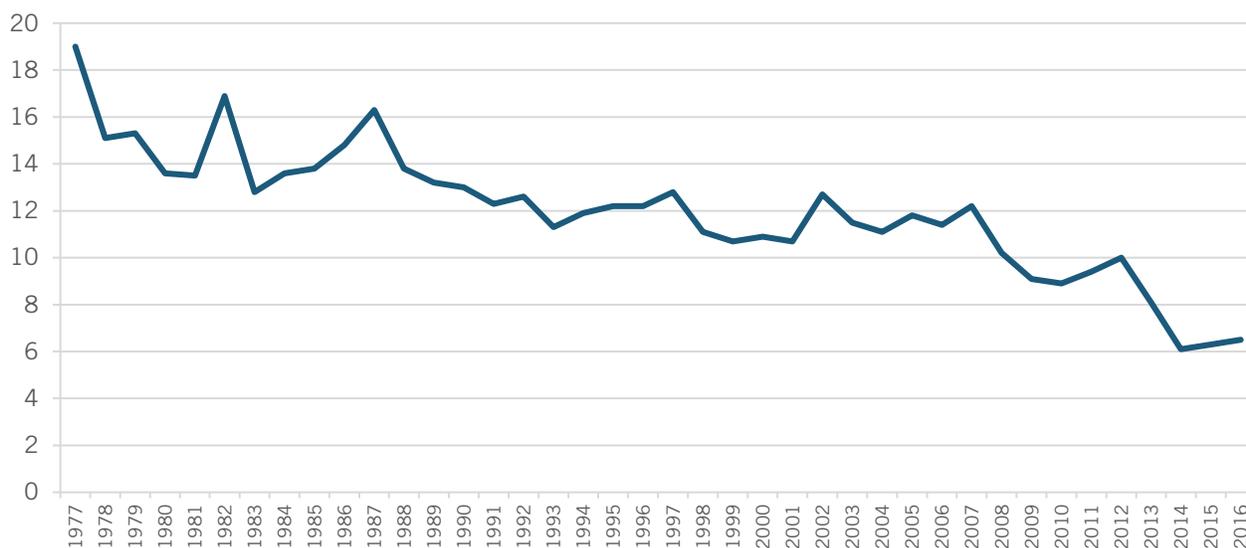
Retail industry start-ups and firms declined not because large retailers had market power to kill start-ups and smaller retailers. In fact, the non-weighted average C4 ratio of the 27 4-digit retail sectors was 0.32 in both 2002 and 2012, hardly evidence of market power—and certainly not evidence of *increasing* market power. Rather, larger existing retailers did a better job at providing what consumers wanted: lower prices and larger selection—and in the case of e-commerce, more convenience. Technologies such as software-enabled logistics systems and web-based e-commerce enabled the average retail firm to get larger. And companies such as Amazon are displacing mom-and-pop retailers because they are incredibly efficient, using robotic warehouses and low-cost Internet ordering.

Retail industry start-ups and firms declined not because large retailers abused their market power to kill start-ups and smaller retailers. Rather, they did a better job at providing what consumers wanted.

Moreover, retail increasingly benefits from scale economies. As one study finds, “much of the increased competitive pressure on small retailers is due to the fact that growing chains face decreasing marginal cost.”²⁴ In other words, when a large store gets larger its marginal costs go down because of scale economies. No wonder small retailers are losing market share; they are less efficient and stock fewer products.

The retail sector used to be much more like an iconic revolving door, with small start-ups entering and then many leaving the market in just a few years. With larger stores, there was less consumer spending for start-ups unless they had something truly unique to offer, such as local convenience.

Figure 3: Change in retail establishment entry rate, 1977–2016²⁵



For example, we have seen this dynamic with hardware stores. Forty years ago, someone who was good with tools might think of opening a hardware store. Today, they would likely think twice about doing so since big box stores such as Home Depot and Lowes serve this market very well, having gained market share from small, independently owned hardware stores. And they didn't

gain it by predation and unfair practices. They gained it by providing a much wider selection of products at significantly lower prices. The typical Home Depot store is around 105,000 square feet (almost the size of two football fields), more than ten times larger than the typical neighborhood hardware store.²⁶ And the big-box stores stock upward of 25,000 different products, significantly more than the neighborhood stores do.²⁷ This volume lets them be much more efficient, with sales per square foot of floor space two-thirds higher, and sales per employee 25 percent higher, than at neighborhood stores.²⁸

This shift toward larger retailers, and the decline in retail start-ups, has been an unalloyed good for the U.S. economy, retail workers, and consumers. For workers, take the example of Walmart. It pays its retail workers on average 25 percent more than the industry average.²⁹ Indeed, one 2014 study found that “working in a store with 500+ employees pays 26 percent more for high-school educated and 36 percent more for those with some college education, relative to working in a store with less than 10 employees.”³⁰ Researchers at Stanford and the University of Michigan found that large chain retailers such as Walmart “pay considerably more than small mom-and-pop establishments.”³¹ Likewise, Michael Mandel found that that fulfillment center jobs at companies such as Amazon pay 31 percent more than brick-and-mortar retail jobs in the same area.³²

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Large retailers provide significant economic and consumer benefits; otherwise, they wouldn't grow. One benefit is productivity. As Ryan Decker et al. wrote:

Most of the labor productivity growth in this [retail] sector has been attributed to net entry. In many cases, existing firms improve productivity in retail trade primarily through adding new, more-productive retail locations rather than expanding existing establishments. Moreover, much of the exit of low-productivity retail establishments in the US economy has been dominated by the exit of “mom and pop” single-establishment firms.³³

Likewise, in a 2006 study, Foster, Haltiwanger, and Krizan examined productivity growth in the retail sector and found:

Virtually all of the labor productivity growth in the retail trade sector is accounted for by more productive entering establishments displacing much less productive exiting establishments. The productivity gap between low-productivity exiting single-unit establishments and entering high-productivity establishments from large, national chains plays a disproportionate role in these dynamics.³⁴

This is one reason retail labor productivity increased by 142 percent between 1987 and 2018, while overall U.S. business productivity increased by just 83 percent.³⁵ These retail giants have tapped into substantial benefits of scale, which are passed on to customers. Moreover, large retailers compete directly against one another, thereby spurring innovation, technology investment and adoption, and efficiency.

Another consumer benefit is saved time. Mandel estimated that before COVID-19, e-commerce was saving American consumers 64 million hours per week in time not spent shopping.³⁶

Yet for the antimonopolists, this decline in small mom-and-pop retail start-ups is a decidedly bad thing. As Thompson wrote, “Today, in a lot where several mom-and-pop shops might once have opened, Walmart spawns another superstore.”³⁷ This is supposedly a bad thing because it is stifling “entrepreneurship.” But this fetishization of small business misses the point. New business formation is not an end; it is a means. The end is more and better goods at lower prices for consumers, not maximizing the number of owners of small, inefficient businesses. If consumers really value locally owned stores providing unique formats, then their spending should reflect that. It appears that most Americans, except perhaps the wealthiest 10 percent, value price, selection, and convenience—and are fine with bigger stores providing the goods they need.

THE CASE OF HIGH-GROWTH START-UPS

If the decline in start-ups is really mostly about a decline in the entry of small retailers, then the story of high-growth, high-tech start-ups—the ones that really matter to innovation and future prosperity—is very different. One reason this debate has become so muddled is too many pundits and advocates conflate start-ups whose owners have no intention of growing with the much smaller number of start-ups that seek to grow their companies to be the next big thing.

There is no relationship between “subsistence” firms and economic growth. For example, a person opening a new pizza parlor usually hopes to hire at most a few workers. MIT's Catherine Fazio and coworkers found that “quantity-based measures of entrepreneurship have little relationship to GDP growth. Yearly fluctuations in counts of firm births appear to hold little relationship to medium-term measures of economic performance.”³⁸ This is because if one person doesn't start that pizza parlor, then someone else will. And in the long-run, small firms on average pay workers less than large firms do, are less productive, and provide fewer stable jobs with fewer benefits.³⁹

Too many pundits and advocates conflate start-ups whose owners have no intention of growing with the much smaller number of start-ups that seek to grow their companies to be the next big thing.

To assess whether the overall slowdown in new firm formation is really a problem, we also need to look carefully at the types of firms that are being started. As Antoinette Schoar wrote,

It is crucially important to differentiate between two very distinct sets of entrepreneurs: subsistence and transformational entrepreneurs. Recent evidence suggests that people engaging in these two types of entrepreneurship are not only very distinct in nature but that only a negligible fraction of them transition from subsistence to transformational entrepreneurship. These individuals vary in their economic objectives, their skills, and their role in the economy.⁴⁰

Schoar also found,

[T]he founders of venture-backed start-ups in the majority were previously employed at larger technology firms such as Microsoft, Intel, or similar firms. An alternative group of founders of transformational entrepreneurs were serial entrepreneurs who had previously

started a high-growth firm. In contrast, almost none of them were running small subsistence businesses before they started a high-growth business.⁴¹

This difference in the kind of new firm start-ups is why dire claims that the sky is falling on new business formation can exist parallel to claims that we are living in a time of robust innovation and entrepreneurship, with Silicon Valley and other tech hubs throughout the nation enjoying frothy and dynamic innovation. As Silicon Valley venture capitalist Marc Andreessen tweeted, “There’s too much entrepreneurship: Disruption running wild!” He added, “There’s too little entrepreneurship: Economy stalling out!”⁴² A big reason for this contradiction is that the above studies reporting gloom don’t differentiate between lifestyle businesses that stay small (mostly in the retail sector) and growth businesses that don’t.

What really matters is how high-growth, innovation-based start-ups are doing (think: biotech or robotics start-ups, not owner-operated pizza parlors). And here, things are healthy. When MIT professors Jorge Guzman and Scott Stern looked at trends in high-growth entrepreneurship for 15 large states from 1988 to 2014, they found that even after controlling for the size of the U.S. economy, the second-highest rate of high-growth entrepreneurship occurred in 2014.⁴³ They also found that even after controlling for the size of the U.S. economy, the second highest rate of high-growth entrepreneurship occurred in 2014.⁴⁴ This research indicates that the entrepreneurial potential (successful start-ups as a share of gross domestic product (GDP)) by founding year hit its low point in 1990, peaked in 2000 at almost twice as high, fell after the dot-com bust, then rose to 2007, fell again with the global recession of 2008–2009, but then bounced back to almost record highs by 2014. As Fazio and colleagues have noted, “Quantity-based measures document a troubling, three-decade-long decline in the U.S. rate of entrepreneurship.... Conversely, outcome-based measures indicate that the rate of entrepreneurship is rising. Early-stage angel and venture capital financing of new ventures has been on a significant upswing over the past several years.”⁴⁵

And when the Information Technology and Innovation Foundation (ITIF) examined data on more than 5 million technology-based start-ups in the United States, it found that the number had grown 47 percent over the last decade.⁴⁶ For example, from 2007 to 2015, software-firm start-ups increased 20 percent. And there were more software firms in 2016 than in 2007. Their five-year survival rate in 2011 was 17 percentage points higher than in 1999.

Not only is there is absolutely no correlation between the change in industry concentration and the change in the number of start-ups, the lion’s share of the decline in start-ups is in one sector: mom-and-pop retail. The rate of real entrepreneurial start-ups is healthy.

CONCLUSION

New firm formation is important to the extent it injects into the sinews of the economy new product and process technologies and new business models. But simply adding small start-ups that don’t do that—and that are on net less productive and innovative than larger firms and pay their workers less—is not a goal the nation should ascribe to. New business for new business’s sake is not the right goal. And so much of the concern about the national crisis of fewer new firms being formed is, while sometimes well intentioned, largely misplaced. Not only is there is absolutely no correlation between the change in industry concentration and the change in the

number of start-ups, the lion's share of the decline in start-ups is in one sector: mom-and-pop retail. The rate of real entrepreneurial start-ups is healthy. Policymakers should move on to other problems and stop hand-wringing about monopoly and start-ups.

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21. The p-values are far from significant: 0.81 for the C4 change in concentration on the change in enterprise birth rate.
22. Figure codes: AG = agriculture; MINE = mining; CONS = construction; MAN = manufacturing; TCU = transportation, communications, and utilities; WHO = wholesale trade; FIRE = finance, insurance, and real estate; and SRV = services. The sum of numbers from each major sector does not equal the overall economy change number because of changes in industry classification codes over this period—some start-ups are not assigned an industry code. the Source: U.S. Census Bureau, Longitudinal Business Database 1977–2016, (Change in number of new establishments), <https://www.census.gov/programs-surveys/ces/data/restricted-use-data/longitudinal-business-database.html>.
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