

Building scale and sustaining growth: The surprising drivers of job creation

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This research has been made possible through the Edward Lowe Foundation's Institute for Exceptional Growth Companies (IEGC), which is supported by a grant from the NASDAQ Educational Foundation. IEGC leverages the National Establishment Time-Series (NETS), a unique longitudinal dataset that tracks more than 44 million U.S. establishments from 1990 to 2010. When combined with other data, we can deconstruct the behavior and performance of every company and workplace in the economy over the past twenty years, uncovering growth patterns that were previously hidden from view.

Overview

The past decade generated an abundance of headline events — the bursting dot-com bubble, 9-11, the banking crises, the home building meltdown, endless war, budget deficits, election cycles — the list goes on. Yet while most of us were looking the other way, a major shift occurred in the structure of the U.S. economy. From 2000 to 2010 the U.S. economy lost productive scale at a frightening pace, reversing long trends of expansion. Consider this:

- Large firms became fewer in number, rarer and smaller.
- They were increasingly replaced by a wave of micro businesses that were, on average:
 - half the size than a decade before, with
 - far lower employment growth, and
 - a proclivity for earlier death.

Most economists generally agree that a modest amount of labor reallocation is a natural and positive process — part of Schumpeter’s “gales of creative destruction.” Yet the severity and speed of the shift from large to small companies is both unexpected and disturbing. The data disputes the belief that the United States has been creating cohorts of healthy, vibrant startups from this reordering process. Instead, we see more anemic ventures with poor prospects for survival and growth. Atrophy seems to have overtaken the forces of growth.

In contrast to this overall trend, a small proportion of U.S. companies *have* been expanding employment and building productive scale in dramatic fashion. We tend not to notice them because they are substantially different from what we might expect. They aren’t necessarily “fast growing” companies in hot industries, but rather companies with slower and repeated incremental growth that compete in all U.S. industries and reside in almost all communities.

When we look at all U.S. business establishments that survived the 2005-2010 period, we see that a slim 1 percent created 72 percent of all net new jobs. This incredible concentration is a hyper version of the Pareto Principle (the old 80/20 rule), where an overwhelming share of outcomes is won by a very small number of players. While surprising to many, the Pareto Principle is widely prevalent in human systems. For example, about 1 percent of websites collect the vast majority of clicks; most book and record sales go to the top 1 percent of those published; and the lion’s share of market value is captured by about 1 percent of firms.

Our findings provide good news for both corporate leaders and policy makers. The evidence suggests that sustained growth can be learned and managed by firms in almost any industry or location. In fact, the more often a business grew in the past, the more likely it is to survive and grow again in the future. The insight that growth is a learning curve may provide a key towards reversing the trend of scale destruction and employment loss. As we show, the more *often* a business grows the more jobs they create.

Sustained growth companies generate benefits that extend far beyond their own success, from raising incomes for employees and the communities where they reside, to increasing social equity. We find strong evidence that regions with more of these sustained growth companies enjoy higher employment growth than other regions, and a soon-to-be released study will show they play a major role in allocating income growth across the economy.

When we put the pieces together, our research supports the view that firm-level growth and regional growth are linked in a cumulative process. As businesses grow more frequently they accumulate productive scale, and as regions increase the number of businesses with frequent growth, they tend to achieve higher employment and income growth. This represents a new view of economic growth that we've only begun to explore.

These insights — from scale destruction and the narrow concentration of growth in the economy, to how firms learn to sustain growth and the impacts they have on their regions — demand more research. We have not yet reached a point where we can confidently make detailed policy recommendations to business or government leaders so that they may better manage firm growth and help reverse the trend of atrophy in the economy. However, we believe this line of inquiry is incredibly promising and urgent.

Scale destruction

Over the past decade, U.S. corporate scale shrank by about one-third, based on a number of different measurements that use employment as a proxy for internal productive capacity. This deterioration in scale means that our largest companies became fewer in number, smaller on average and have created fewer new jobs than in the past. Meanwhile, the number of companies with fewer than 20 employees has skyrocketed. This reflected a **massive shift in the U.S. workforce, from larger companies with productive scale to smaller ones with very little or none.**

The loss of corporate scale has a profoundly negative impact on the U.S. economy. As companies grow and expand capacity — or ‘scale up’ — they add labor and capital, providing more job opportunities and increasing the tax base. Production scale lowers unit costs, which increases a firm’s price competitiveness in both domestic and export markets. Larger companies tend to pay higher wages and offer more non-pay benefits than smaller companies. They also spend more on R&D. Companies with repeated growth raise county-level incomes, dispersing the benefits of their growth throughout their communities, most strongly in lower income and nonurban areas.¹ There are plenty of reasons why we want our companies to build scale.

Number and share of U.S. firms by employment size: 2000 to 2010

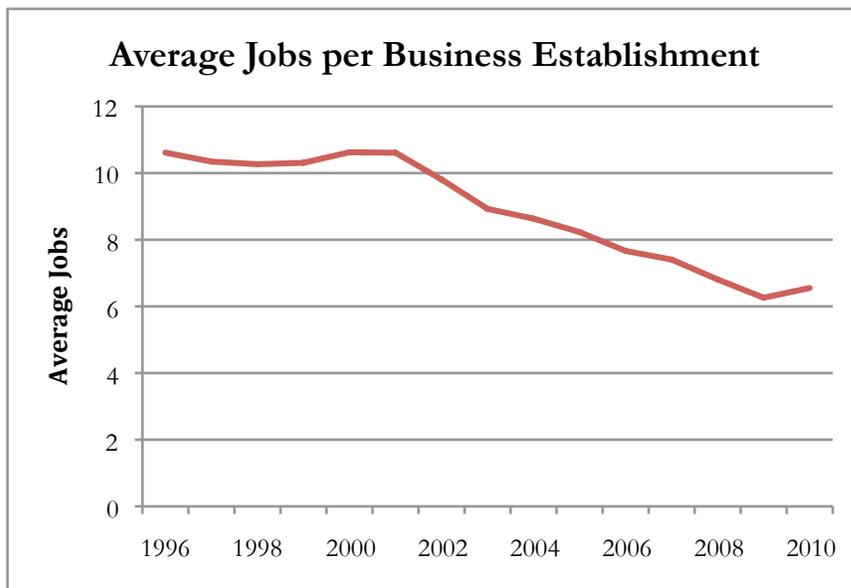
Employee size	2000	2010	Number Change	Share Change
1-4	8,178,388	16,406,769	101%	16%
5-19	2,403,982	2,508,782	4%	-40%
20-99	650,221	659,685	1%	-42%
100-1,000	103,919	100,572	-3%	-44%
1,000-19,999	8,815	8,718	-1%	-43%
20,000+	429	329	-23%	-56%
Totals	11,345,754	19,684,855	73%	0%

NETS data with additions. Analysis by Gary Kunkle with database support from Gregg Cole, IEGC. Same source for all subsequent tables and charts throughout this report.

¹ Based on a forthcoming IEGC-sponsored paper by Campbell, James and Kunkle.

As the table above demonstrates, from 2000 to 2010 the number of firms in the private sector grew by 73 percent². This growth was concentrated among firms with fewer than 100 employees, especially among the smallest firms; the number of companies having less than five employees doubled in 10 years. Meanwhile, the number of companies with 100 or more employees has fallen over the last decade with their relative proportion in the economy declining by more than 40 percent. **The largest firms suffered most; their total numbers were reduced by 23 percent and their share of all firms in the economy fell to half.**

One of the most obvious symptoms of this loss of productive scale is the dramatic reduction in the average size of the U.S. workplace (also known as “business establishments”). In 2000 the average U.S. business establishment employed 11.9 employees, but by 2010 that number had fallen to 7.4 — a scale loss of 37 percent in a single decade.

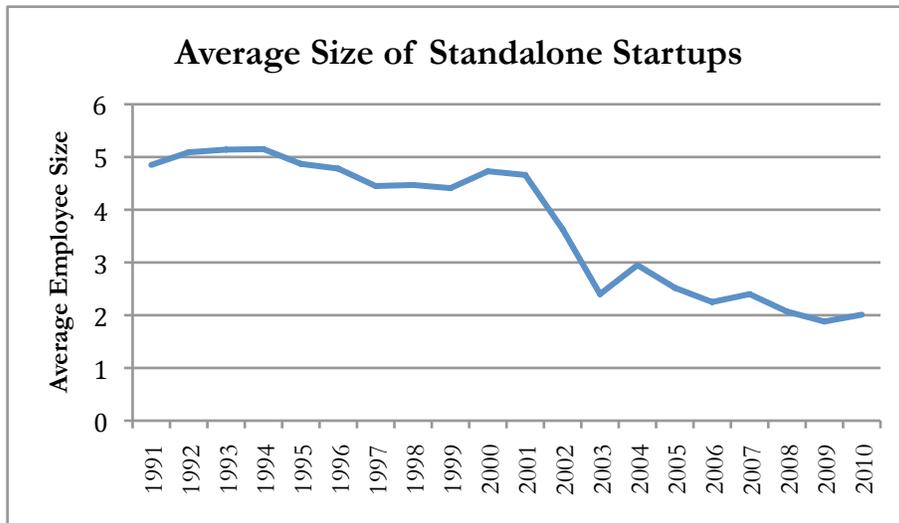


To investigate this descaling trend more carefully, let’s take a closer look at startups. Almost as a founding myth, Americans like to tell each other that entrepreneurs built our national economy and, therefore, the key to our future economic health is to encourage a higher number of startup companies. Yet the data are a bit more sobering than we might wish to believe.

First, it is true that the number of startups exploded over the past decade, rising from 870,394 in 2000 to 2.2 million by 2010, or about 2.5 times as many than before. However, **new start-up ventures have become smaller and less likely to survive, and those that do survive create fewer jobs after their birth.**

² Firms (also referred to as ‘companies’) are the sum of all establishments (aka workplaces or businesses) within a legal entity. Establishments can include headquarters, branches or, in the case of single-establishment firms, all of a company’s operations at one location. In 2010 there were a total of 19,462,759 firms with a single establishment (i.e. only one place of business) and 222,096 firms with multiple establishments.

For example, the average single-location business (standalone startup) born in 2000 employed 4.7 workers, but a similar business born in 2010 had only two employees, as shown in the chart below.



Looking at the smallest end of the startup scale, we find that the survival rate of sole proprietorships (single employee firms) has fallen dramatically over the past two decades. Consider that 83 percent of sole proprietors that opened shop in 1993 survived for the following five years — a 20-year peak — but by 2000 the five-year survival rate had already fallen to 72 percent. And the slide continued. Only 63 percent of sole proprietorships born in 2005 survived to 2010. Thus, the chances of survival fell from over 4-in-5 to less than 2-in-3 since the high-water mark about 20 years ago.

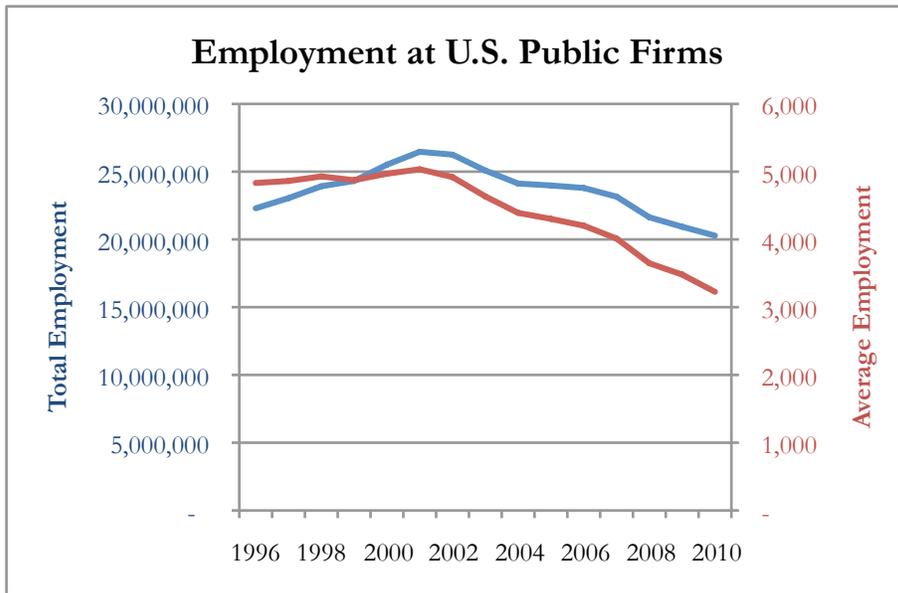
To make matters worse, the sole proprietorships that did survive created far fewer new jobs than before. Survivors born in 1998 created an average of 0.84 jobs by 2003 — a 20-year peak. In contrast, those born in 2005 created only 0.54 jobs each if they survived to 2010. This is a **36 percent drop in the job generating power of sole proprietor start-ups** in less than a decade. Policies that simply advocate for more startups are not the answer to lasting national job growth.

Looking at the other extreme, publicly traded firms represent some of our nation’s largest, most globally competitive and resource-endowed companies. The data shows that these important firms suffered significant scale destruction over the past decade.³

In 2000 there were a total of 25.5 million Americans employed by public companies, but by 2010 this number had fallen to 20.3 million, a loss of 21 percent (blue line in the chart below). Similarly, at the start of the decade the **average publicly-traded firm** employed 4,969 workers, but by the end of the decade their average **workforce fell by 35 percent** to 3,226 (red line).⁴

³ Publicly-traded companies are those actively listed on the NYSE, NASDAQ, AMEX, the American Stock Exchange and OTC markets.

⁴ Note how the lines begin to slope downward around 2001, well before the current recession.



The charts above show an unsettling pattern. Generally speaking, our economy was broadly building scale until about 2001. The average size of new startups was holding nearly constant, while the survival rate and growth of sole proprietorships was at or close to its peak. Both the total and average number of employees at public companies was expanding until its zenith around 2001. Mysteriously, at that time, all these trends changed direction. Startups, although much more numerous than before, became smaller at birth. Fewer of those born with one employee survived the next five years, and those that did added fewer new jobs. Employment at public companies began to drop.

It seems as if something happened that triggered these trend lines to shift from positive to negative at about the same point in time. Unfortunately the causal forces driving these changes are not clear. Some might argue that it was the result of corporations off-shoring production or the rise in national productivity — yet those processes had been unfolding for many decades before. Others may argue that it was a collapse in national confidence, perhaps as a cumulative response to traumatic events around the beginning of the decade, such as terrorism and war, financial crises and debt. The fact is, we just don't know. But, given the magnitude of the changes and their implications for U.S. growth and global competitiveness, it's pretty certain we should research this phenomenon much more deeply to try and understand why exactly they occurred.

Is stagnation and decline the new normal?

Against this backdrop of scale loss, we continue to hear mixed messages about job creation. In one ear, we hear anecdotes of successful companies expanding their operations and tales of impressive regional and industry growth. In the other ear, we hear about the national collapse in job creation. So what is the true job creation picture — exceptional growth, sliding decline or long-suffering stagnation? Are there still some companies creating lasting productive scale?

Naturally, politicians and the media pay close attention to the number of new jobs in a region, especially around election time. There tend to be two flaws inherent in much of this jobs discussion. Often the focus is limited to jobs created in a short window of time, without considering those lost during that same period or questioning whether these jobs will actually remain over the longer term. Discussion also tends to center upon the *average* number of jobs created by companies in a region. Yet considering only new jobs and averages can be very misleading.

To illustrate, let’s look at all U.S. business establishments that survived the 2005-2010 period. In 2010 there were roughly 12 million private sector establishments (for-profit places of work) in operation since 2005 or before. On average, these survivors created 0.4 jobs each through organic growth.⁵

In the table below, we categorized all business establishments into three groups based on whether or not they created net new jobs between 2005 and 2010. During that period “Growers” added and retained new jobs, “Decliners” suffered net job loss, and employment at “Stagnators” was the same.

Consider first that Growers created a gross total of 13.8 million new jobs, while Decliners destroyed 9.2 million jobs, as shown in the table below. When we subtract gross job losses from gross job gains we find that the net total of 4.6 million is about one-third of the gross figure. Thus, reporting only jobs created by Growers without considering jobs lost by Decliners over a period is indeed misleading.

Total job change by U.S. business establishments: 2005-2010

Category	Establishments		Job Changes		Average
	Number	Percent	Number	Percent	
Growers	1,395,413	12%	13,777,089	302%	9.9
Decliners	853,820	7%	-9,221,718	-202%	-10.8
Stagnators	9,765,856	81%	0	0%	0
All	12,015,089	100%	4,555,371	100%	0.4

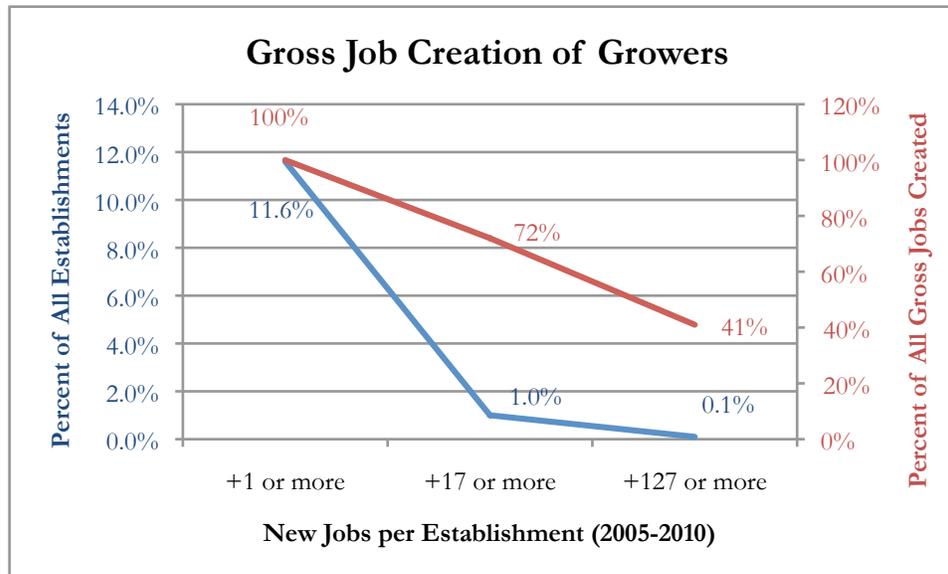
As the table above shows, job growth (and loss) is concentrated in a relatively small proportion of firms. Only 12 percent of companies (Growers) had more employees at the end of the period than at the beginning.⁶ Notice too that **8-in-10 business establishments did not change their employment levels** at all over the five-year period. Indeed, stagnation was the norm — but that’s not true for all companies.

⁵ Organic growth refers to the addition of employees at existing operations, as opposed to adding new employees by opening branches or through mergers and acquisitions. For this part of the analysis we look only at the establishment level rather than at the aggregated firm level in order to measure organic growth, rather than growth via mergers and acquisitions.

⁶ The percent of establishments that reduced employment (7 percent) does not count companies that went out of business during the period because this analysis only evaluates survivors – those still in business in 2010.

1% of business establishments create 72% of new jobs

To find companies that have been building lasting scale, let's look more closely at all the business establishments that created and retained jobs over 2005-2010. To the left of the chart below we see all the Growers, which comprised 11.6 percent of all business establishments and created 100 percent of the 13.8 million gross new jobs from the previous table.⁷ These are the ones that had 1 or more net new jobs over the five-year period, as shown on the horizontal axis.



In the middle of the chart is the top 1 percent (the 99 percentile). These are the subset of Growers that created and maintained at least 17 net new jobs over the period. Together, this top 1 percent was responsible for 72 percent of all gross jobs created (9.9 million of the 13.8 million), or 218 percent of the net 4.5 million from the table above.

The super-heroes of job creation are to the far right of the chart. This one-tenth of 1 percent of establishments (the 99.9 percentile) are those that created 127 new jobs or more during the period. They were responsible for 41 percent of the gross job creation in the economy.

Thus, growth is exceptionally concentrated among a very small portion of businesses. Essentially, **12 percent of business workplaces create *all* the new jobs in the economy, and the top 1 percent is responsible for about three-fourths of that total.**

The significance of the top 1 percent for economic growth has not been generally understood or acknowledged. Yet, the characteristics and practices of this exceptional subset may hold the keys to a better understanding of how companies build lasting scale while creating and retaining jobs.

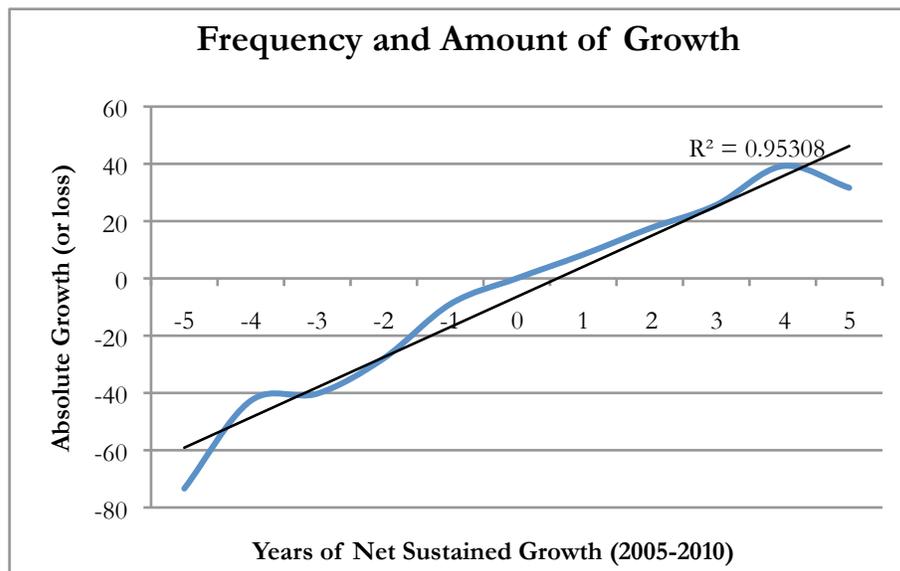
⁷ Growth across all establishments (and firms) is a Pareto distribution, with a high central peak at the median value (0) and long tails to the right (growth) and left (loss) sides. This chart shows the right-hand tail of the distribution.

Growth frequency drives growth amount

How did this small group of companies produce such incredible job creation totals? It's a modern equivalent of Aesop's tortoise and hare story: slow and steady wins the race. Incremental advancement, repeated over time, achieves greater results in the long run than a few short bursts. In other words, **the more times a company grows the more likely they are to be in the top 1 percent of growth.**

For every establishment over the 2005-2010 period there were five possible years when employment could have changed (2005 to 2006, 2006 to 2007, etc.). We've counted the number of years each establishment in the economy added new jobs, then subtracted the number of years they shed jobs, yielding a measure called "net sustained growth."

In the chart below, the net number of growth years for every U.S. for-profit establishment (X axis) is plotted against "absolute growth" (Y axis), which is the total amount of job growth (or loss) experienced by establishments over the entire period.



The chart above shows that, on average, the more years a firm grew, the more total growth they achieved over the period. For example, establishments with one net year of growth added an average of 8 new employees. Those growing twice during the period added an average of 17 net new jobs. (Note that this is also the threshold for the top 1 percent as we saw in the growth distribution earlier.) Establishments with three net growth years added 26 new employees, and the totals rise with almost every additional year of growth.

We also see that the relationship between the frequency and the amount of growth is exceptionally strong as represented by an almost straight line (with an R-square of 0.95). Thus, **sustained incremental expansion over time tends to drive total jobs created** during that period.

This finding may be more important than that it first appears. Policy makers are fond of large one-off events, such as startups and new plant openings, as these generate exciting media coverage. Yet, the evidence shows that one-off events aren't the primary driver of lasting job growth. To better tap this process and enhance national growth, we must challenge some of our most deeply embedded biases.

Growth is a learning curve

According to our evidence, companies accumulate growth over time by growing frequently in small increments, rather than rare but large growth spurts. This begs the question: do companies that repeat growth learn from the process? If so, those that have grown multiple times in the past should be more likely than others to grow again in the future.

It turns out that there is indeed some “stickiness” associated with sustained growth. The data tells us that the *more frequently* a firm grew in the past, the *more likely* it is to survive and grow again in the future. In this way, **growth frequency partially predicts future performance**. This insight offers a powerful new view of how we might stimulate more firms to expand — by helping them learn to grow more often.

Traditional firm-growth research, including the groundbreaking work by David Birch back in the 1980s, focused almost exclusively on measuring how fast a company grew and how much they grew over a period of time. We often still celebrate companies that achieve spectacular growth across relatively short periods, but don't give much thought to whether recent meteoric growth leads to future success. In fact, there has been surprisingly little study of whether rapid growth is really good for the company or their region over the longer term. We just assume it is.

Growth speed is more “slick” than sticky. The evidence below shows that the **faster a company grew in one period, the less likely it is to grow again in the future**. In fact, it's also **more likely to die**. Unfortunately, the total amount of past growth is not a very helpful indicator either, telling us almost nothing about a company's future prospects.⁸

To see if sustained growth or any of these traditional measures are “sticky,” we test their ability to predict the future performance of companies. Consider the growth of every for-profit U.S. establishment that was alive during the 2000-2005 period. We measure whether the growth during that period increased the probability of three sets of future outcomes: 1) surviving the next five years; 2) having any growth at all during the next five years; or 3) attaining exceptional future growth (in the top 1 percent on any of the three growth measures) over the next five years.

In the table that follows, we can see how one additional “unit of growth” in the past changes the odds of future survival, growth or exceptional growth in the future. One unit of sustained growth is one year of employment expansion in 2000-2005; one unit of absolute growth is a single new employee in that past period; and one unit of relative is one additional percent of past growth.

⁸ The speed of growth, or “relative growth,” is the percent change in employment over a period. The amount of growth, or “absolute growth,” is the total amount of employment change over a period.

We read the table by cross-referencing growth units on the left with future events along the top right. In the blue box a value *greater than 1* means that one more unit of that particular past growth *increases the odds* for the corresponding future outcome; a value less than 1 decreases the odds; and a pure 1 means there is no relationship between past and future events (the odds are not affected).⁹

One additional unit of this growth...		Changes the odds of this outcome by this amount...				
Past Growth (2000-2005)		Future Growth and Survival				
		Survival	Growth	Exceptional Growth		
Growth Variables Units of Growth		Survive	Add at least	Top 1%	Top 1%	Top 1%
		to 2010	(2006-2010)	Sustained (2006-2010)	Absolute (2006-2010)	Relative (2006-2010)
Sustained	Years of Growth	1.504	1.674	2.556	2.074	1.013*
Absolute	Employee Change	1.000	1.000	1.000	0.999	0.999
Relative	% Employee Change	0.997	0.987	0.995	1.000	0.766

Based on logistics regression. N=12,933,411. All models are statistically significant; all variables are significant except *.

Let's first look at sustained growth. In the top left corner of the blue box, we see that one more year of growth increases the odds of an establishment surviving the next five years by 50 percent (1.504) — and it increases the odds of future growth by 67 percent. More impressive, one more growth year in the past *doubles* the odds that an establishment will be in the top 1 percent of absolute growth among all establishments in the next period — and increases the odds that it will be in the top 1 percent in sustaining growth by 2.6 times. In other words, **the more years a business establishment grew in the past, the more likely they are to survive, grow, and achieve exceptional growth in the future.**

In stark comparison, relative growth (i.e. growth speed) actually *reduces* the odds of future survival, growth and exceptional growth. The faster a business grew in the past, the less likely it is to survive and grow in the future. Past absolute growth had no influence on the odds of future survival or growth, but did reduce the odds for future exceptional growth.

We can stylistically infer that those that run the fastest tend to burn out earliest. Rapid growth places significant stresses on the company, and the evidence implies that these stresses become nearly unmanageable as growth speed increases. Imagine how much more difficult it is to grow 100 percent in one year than just 10 percent when you have to constantly manage such critical issues as hiring and training personnel, securing new operational space, monitoring suppliers and inventory, financing the expansion, developing new products and services — to name but a few daily headaches.

The good news is that frequent growth tends to be repeated. This strongly suggests that *growth is a learning curve*. Companies face many of the same challenges every time they grow, although the complexity of these issues increases. But as companies grow more often, their decision-making and abilities to implement management actions improves, increasing the likelihood that they will survive and grow again in the future.

⁹ To calculate the percent change in the odds ratio, subtract 1 from the number in the table. For example, if the table shows 1.504, the odds of the associated outcome increase by 50.4% (1-1.504) for every additional unit of growth. If the table shows 0.997, the odds decrease by 0.003 percent (1-0.997) for every additional unit.

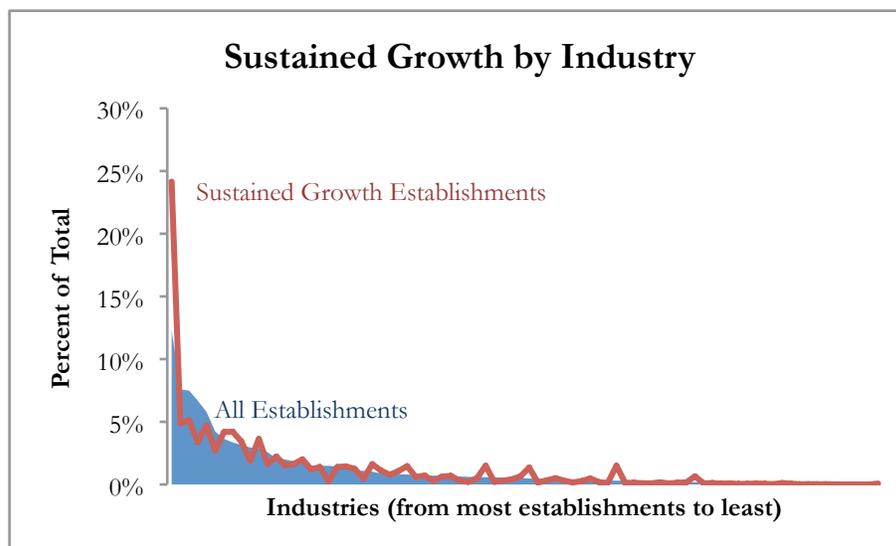
The real multipliers of sustained growth

We could make a reasonable case that sustained growth companies are among the most efficient producers in the economy¹⁰. They are the ones primarily responsible for building productive scale and, as we shall see, generating a host of non-market social benefits. In fact, public policy is not only concerned with increasing economic efficiency; it also strives for social inclusion in how growth benefits are accessed and shared across the population.

The evidence shows that **sustained growth companies are found in every industry and nearly every populated county** across the country. Thus, sustained growth tends to spread the benefits of growth to a more diverse range of workers and owners than companies traditionally favored by public policy. In addition, minority- and women-owned companies are proportionately more likely to have sustained growth than white- and male-owned firms.

Traditional economic thinking broadly assumes that a company's industry and location greatly influences its growth potential. Accordingly, growth companies are more likely found in "knowledge intensive" industries (because of innovation and knowledge sharing) and in more urbanized areas (because of greater access to resources and markets), when compared to companies in other industries or sparsely populated areas. This view helps drive industry cluster policies and the billions of public dollars annually spent to support companies in biotechnology, clean energy, advanced materials and other favored industries.

If these theories are sound, we should find solid evidence that companies with sustained growth are overwhelmingly concentrated in relatively few industries and geographic locations. Yet when we compare the spatial and industry distribution of sustained growth establishments with all other establishments, we find that these traditional assumptions just don't match the facts.

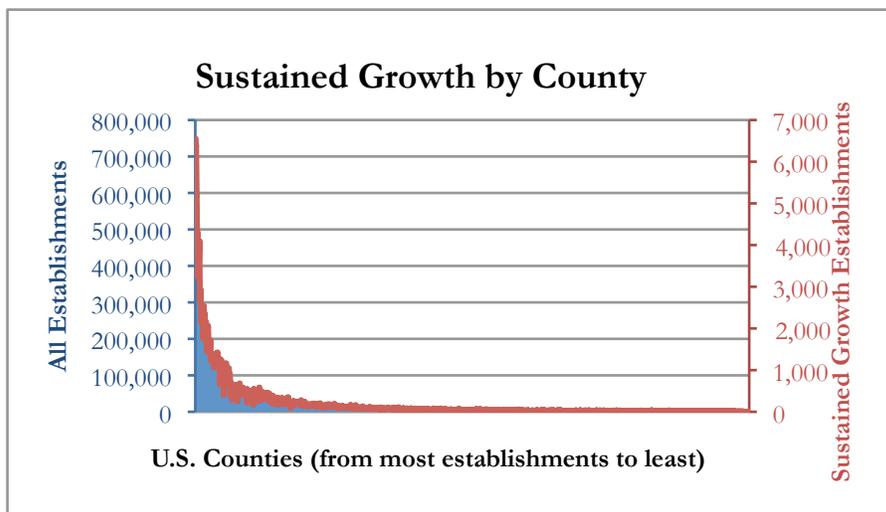


¹⁰ Some welfare economists argue that optimal tax policy implies a 0 percent marginal tax rate on the most efficient producers, leaving productive resources in the hands of those most able use them for social benefit.

The chart above shows that there is little difference between the industrial distribution of all establishments in the economy and those with sustained growth. The horizontal (X) axis shows the array of industries in the United States, from those with the most establishments (left) to the least (right).¹¹ The red line shows the distribution of establishments with sustained growth while the blue area shows the distribution of all establishments in the economy regardless of growth.

In fact, there are **sustained growth establishments in each of the 81 industries** in the United States, as defined by two-digit Standard Industry Classification (SIC) codes. The correlation between the number of sustained growth establishments in an industry and the total number of establishments in that industry is 0.868, meaning that about 87 percent of the variation in number of sustained growth establishments in an industry can be explained simply by that industry's share of all establishments.

We also find a close match between the county-level distribution of all establishments and those with sustained growth. The correlation is a very high 0.982. Where there are people and businesses, there tends to be a **similar proportion of sustained growth companies**: rural areas, small towns, secondary cities and metro areas alike.¹²



It's also important to note that sustained growth is not overwhelmingly concentrated among companies owned by white males. In fact, **minority- and women-owned companies are over-represented** when compared with other companies. Some 2.5 percent of sustained growth establishments are owned by minorities, compared with 1.5 percent of establishments without sustained growth. Similarly, 9.8 percent of establishments with sustained growth are owned by women, compared to 9.1 percent of other establishments. These differences are highly significant because they are derived from a measure of every company in the economy, not merely a sample.

¹¹ Business Services (far left) has the most establishments and Tobacco Products (far right) has the least.

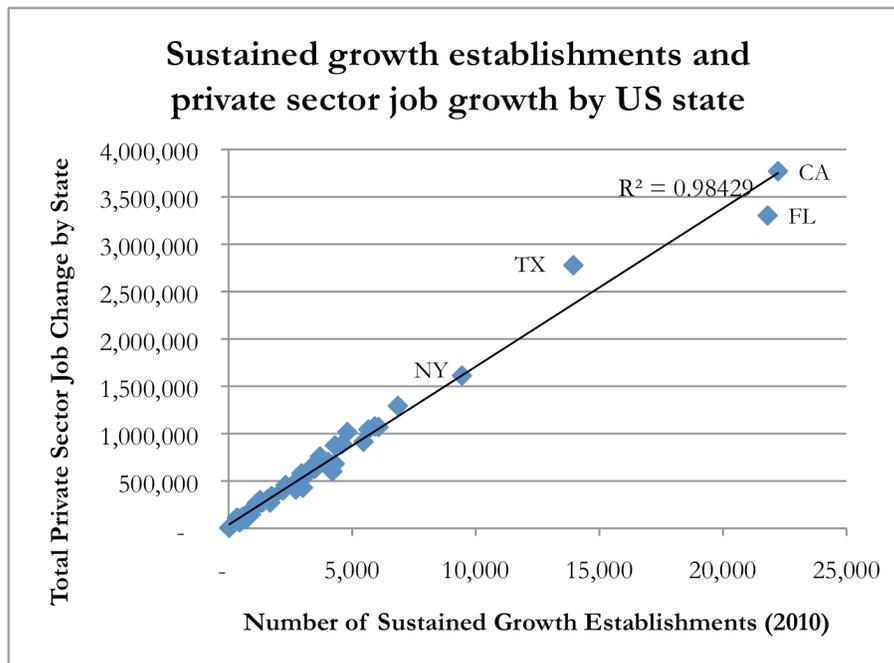
¹² Sustained growth companies across industries and counties appear as right-hand Pareto distributions.

This is all good news from the perspective of social equity. If traditional views were true, then the benefits of growth (such as employment opportunities and rising incomes) would tend to be solely concentrated among relatively highly educated knowledge workers, particularly in urban areas. The evidence refutes this assumption. Sustained growth spreads the benefits of growth to workers in all industries and locations, to owners regardless of race or gender, and by default to stakeholders with all levels of education, training, location preference or demographic background.¹³

The driver of regional employment growth

To recap, our data shows that sustained growth companies are actively building scale across nearly all industries and locations in the economy. Yet some places *do* have more of these exceptional companies, and it is widely reported that some places added more jobs over the past decade than others. Is there a link between company-level sustained growth and regional employment growth?

To determine this, we counted all the for-profit establishments that survived and expanded at least twice over the 2005-2010 period. This is shown below on the X-axis (horizontal), with each dot representing a U.S. state¹⁴. Then, for each state, we calculated absolute job growth in the for-profit sector by subtracting the total number of jobs in 2005 from the number in 2010. This represents the total change in for-profit employment over the period as displayed on the Y-axis (vertical) below¹⁵



¹³ This evidence strongly suggests that high and low skilled workers are complimentary in production. This loosely translates into the old adage that ‘a rising tide lifts all boats’.

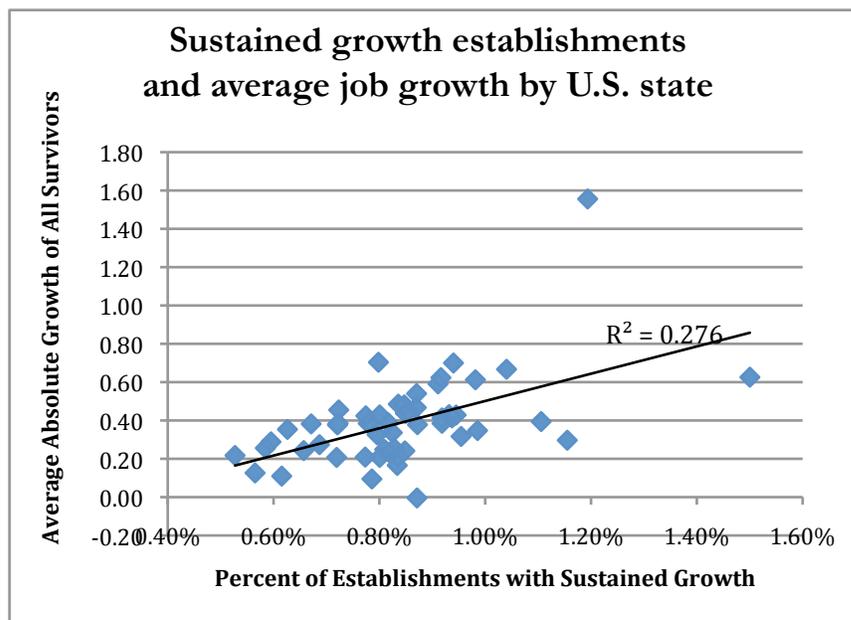
¹⁴ Our ‘state’s analyses include all 50 states plus District of Columbia, Puerto Rico, and U.S. Virgin Islands, so that n=53.

¹⁵ Since we are counting all jobs in the private sector, the analysis allows for workers to change jobs between workplaces across the sector during the period.

The more sustained growth establishments residing in a state, the higher the total number of new jobs added in that state over the period. In the chart above the relationship is nearly a straight line¹⁶.

While states with larger populations tend to dominate the upper right part of the distribution, the relationship between population and total job growth is not perfect. For example, New York had a larger population than Florida in 2010 (19.4 million vs. 18.8 million according to the US Census); however, Florida had twice as many sustained growth establishments (21,809 vs. 9,440) and twice as many new private sector jobs created over the period (3,303,642 vs. 1,613,022). Thus, **job creation was far more dependent upon the number of sustained growth companies in a state than the size of its population.**

To see this relationship somewhat differently and begin to control for state size, we investigated whether states with higher relative concentrations of sustained growth establishments demonstrated higher average job growth.



In the chart above, the X-axis represents the percentage of all for-profit establishments that had at least two years of net employment expansions and survived the 2005-2010 period. The Y-axis represents the average absolute job growth of all surviving companies regardless of whether they expanded or not over the period.

Although the relationship does not adhere as tightly to a straight line as the previous chart, we clearly see that states with **higher average job growth** among for-profit survivors tend to be those with **higher relative concentration of sustained growth establishments.**

¹⁶ There is a similarly strong relationship between the total number of times all for-profit companies in a state grew and the total number of jobs created by all surviving establishments in both the for-profit *and* non-profit sectors over the 2005-2010 period, with an R-square of 0.935.

We can reasonably conclude that states with more sustained growth companies tend to experience higher overall job creation than states with fewer of these exceptional companies. Thus, a region's employment growth is largely dependent upon the ability of its companies to sustain growth.

Conclusions

When we link the evidence presented in this paper, several implications emerge. To increase employment growth within a region, we must increase the number of companies with sustained growth. Because sustained growth appears to be tied to learning through repetition, we must find new ways to encourage firms to expand more frequently. Since sustained growth naturally occurs across firms in nearly all industries and locations, and across gender and race, we should not bias growth policies towards traditionally favored groups. This will help ensure that the benefits of growth and scale building can be widely shared across society.

Unfortunately, we have entered uncharted territory where economic atrophy appears to be the new normal. Over the past decade the U.S. economy experienced widespread scale destruction, where large resource-endowed firms were increasingly replaced by newer small firms, with poorer prospects for survival and growth than just a decade ago. This paper presents evidence of symptoms, but we know little about the underlying causes. Before we can begin to effectively address these problems we must first gain a better understanding of the forces behind the deterioration. This obviously calls for more directed research.

We also believe that one of the most fertile areas for future inquiry is the nature of sustained firm growth. We must better understand why such a small fraction of companies are responsible for the overwhelming share of employment growth, and how certain firms appear to learn the processes of sustaining growth over time. As we have shown, the companies that do this are much more likely than others to survive and grow again in the future.

Clearly, another crucial avenue for further inquiry is the relationship between regional outcomes (i.e. employment and income growth, and social equality) and the spatial distribution and movement of sustained growth companies. We have demonstrated that while these firms are widely dispersed across space and industry, those regions with a relatively higher share of these firms tend to out-perform other regions in job creation. There is great social and economic value in better understanding how these processes work to the advantage of companies, workers, investors, and communities.

We are fortunate to have access to datasets and research tools that allow us to delve far deeper into the process of economic growth and decay than ever before. This paper illustrates just a fraction of this potential. Yet the results of our efforts will be seriously hampered if we are not willing to challenge traditional assumptions about the causes of firm and regional growth. We must move rapidly in search of new models that reflect the reality shown in real-world data while avoiding an over-reliance on antiquated theories and practices that lack solid empirical justification.

Indeed, these findings present significant challenges to status-quo views. For example, incremental growth is not as sexy as a ribbon cutting ceremony at a plant opening or a new startup venture. The fact that companies with sustained growth are in every industry and every location is at odds with the long-running reliance on industry cluster policies. Creating new start-ups that fail to survive or grow does not fundamentally improve our economic situation in the long run.

Gaining the attention of policy leaders and changing programs and behavior is a difficult challenge. Yet numbers speak loudly. We believe that the insights contained in this summary report, which touch only part of our research, will be a catalyst for new thinking, policies and programs.

As we move forward, we will dive deeper into the growth learning curve to better understand the difficulties companies face as they expand, how they evaluate their expansion options, and how they make decisions and learn from their mistakes. These insights may lead to more effective tools for helping companies learn to grow. Because we believe that company-level sustained growth is directly linked to the economic vibrancy of regions, we see this research as one of the most promising paths towards reversing the tide of scale destruction and reinvigorating national economic growth.

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