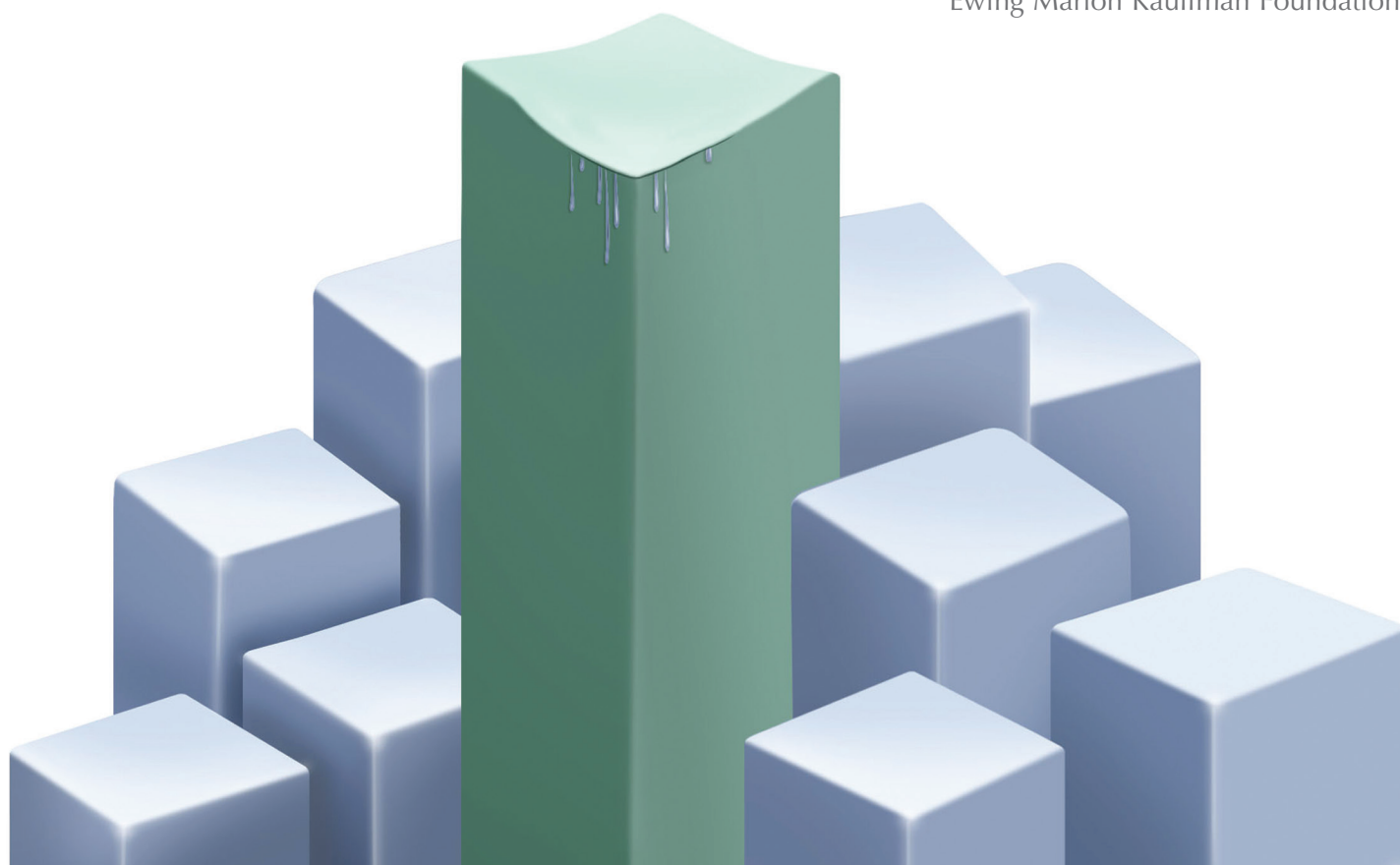


# Kauffman Foundation Research Series: Firm Formation and Economic Growth

## Starting Smaller; Staying Smaller: America's Slow Leak in Job Creation

July 2011

E.J. Reedy and Robert E. Litan  
Ewing Marion Kauffman Foundation





---

Kauffman Foundation Research Series:  
Firm Formation and Economic Growth

# Starting Smaller; Staying Smaller: America's Slow Leak in Job Creation

July 2011

E.J. Reedy and Robert E. Litan  
Ewing Marion Kauffman Foundation

## Abstract

Although understandable in light of its traumatic impact, the Great Recession of 2007–2009 may be distracting attention from a more fundamental troubling economic trend. The United States appears to be suffering from a long-term leak in job creation that pre-dates the recession and has the potential to persist for an unknown time. The heart of the problem is a pullback by newly created businesses, the economy's most critical source of job creation, which are generating substantially fewer jobs than one would expect based on past experience.

In other recent research, the Ewing Marion Kauffman Foundation pointed to downward trends in job creation economy wide,<sup>1</sup> evidence of the often-cited jobless recovery of the 2000s, but also an indication of some economy-wide slowing in the dynamics of job creation (and, until the Great Recession, job destruction). In that research, Haltiwanger, Jarmin, and Miranda also point to the continued importance of startups to net job creation, but with some indication that the rate of job creation at startups might have slowed during the last decade. In this report, which is part of the Kauffman Foundation Research Series on Firm Formation and Economic Growth, we flesh out these findings by examining job creation in young businesses over an extended period. Even before the Great Recession, firms were starting smaller. They were opening their doors with fewer workers than the historic norm and were relatively reluctant to expand their workforces even during good economic times. Since at least the middle of the last decade and perhaps earlier, the growth trajectories and survival rates for these businesses meant that they were contributing fewer and fewer new jobs to the economy.

This trend has only worsened since the onset of the most recent recession. The cohort of firms started in 2009, for example, is on track to contribute close to a million jobs less in its first five to ten years than historical averages. The

disappointing job trends can be attributed, in part, to changing industrial dynamics and long-term structural change, but there is still much to explore and explain. It is not clear at this point how long the patterns documented here will persist.

This research also builds on the 2010 Kauffman Index of Entrepreneurial Activity, which showed that the steady nature of those entering self-employment or business ownership (indeed, 2010 was the highest year on record in the United States for the Kauffman Index) was being driven by entry of businesses likely to provide less employment over time.<sup>2</sup> This essay looks more deeply at new “employer businesses,” the subset of startup companies that create jobs other than those of the owner.

## Introduction

The United States, like many developed economies, is in the midst of a jobs crisis. While the recession was officially declared over in June 2009, the U.S. unemployment rate at this writing in July 2011 is still above 9 percent of the active labor force. If the under-employed are counted in this total, the employment deficit is closer to 16 percent.<sup>3</sup>

Consider these disturbing facts:

- In 2010, 11 percent of people who found a job after being unemployed had been out of work for more than a year (almost four times the level in 2007 when 3 percent were unemployed for twelve months or longer).
- In 2010, 34 percent of people who found work after being unemployed had been jobless for less than five weeks (down from 49 percent in 2007).<sup>4</sup>
- Currently, the percent of the population working has fallen almost five percentage points from 63.1 percent to 58.4 percent.<sup>5</sup>

1. [http://www.ces.census.gov/docs/bds/plugin-BDS%20March%202011%20single\\_0322\\_FINAL.pdf](http://www.ces.census.gov/docs/bds/plugin-BDS%20March%202011%20single_0322_FINAL.pdf).

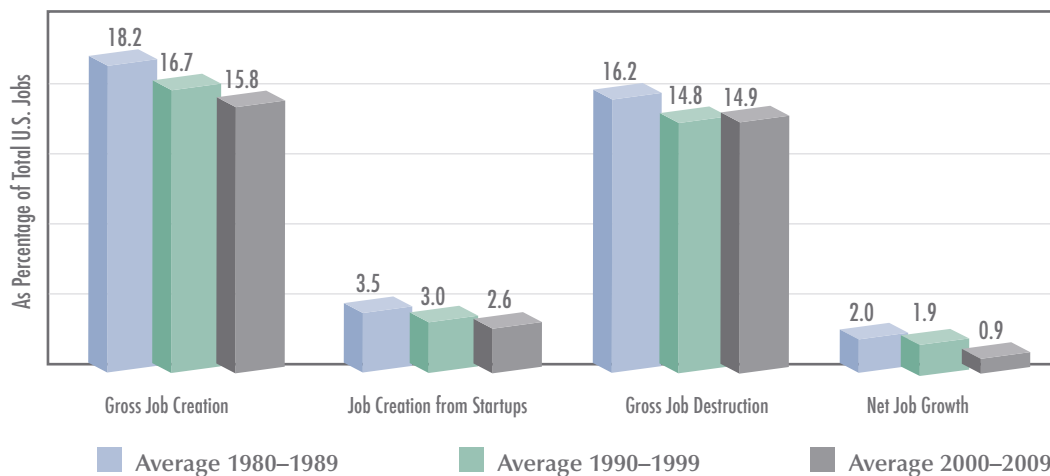
2. [http://www.kauffman.org/uploadedFiles/KIEA\\_2011\\_report.pdf](http://www.kauffman.org/uploadedFiles/KIEA_2011_report.pdf).

3. <http://blogs.wsj.com/economics/2011/06/03/nearly-1-in-3-unemployed-out-of-work-more-than-a-year/>.

4. <http://www.bls.gov/opub/iils/pdf/opbils89.pdf>.

5. <http://www.ft.com/intl/cms/s/0/b3c143b6-952d-11e0-a648-00144feab49a.html>.

Figure 1: Trends in Gross Flows and Net Job Creation



Source: Business Dynamics Statistics Briefing: Historically Large Decline in Job Creation from Startup and Existing Firms in the 2008–2009 Recession, Kauffman Foundation, March 2011, [http://www.ces.census.gov/docs/bds/plugin-BDS%20March%202011%20single\\_0322\\_FINAL.pdf](http://www.ces.census.gov/docs/bds/plugin-BDS%20March%202011%20single_0322_FINAL.pdf).

Recent Census Bureau research has pointed to one factor that is contributing to this slowdown in job creation—shrinking job creation in startups. As shown in Figure 1, startups created an average of 3.5 percent of total U.S. jobs annually in the 1980s, but in the 2000s contributed only 2.6 percent of total U.S. jobs. While diminished in number, these jobs still were the difference between positive and negative overall net job growth in the United States.

Media and academic commentators who bemoan America’s unusually slow rate of job creation after the 2007–2009 recession are missing what we believe is a longer-term trend that began earlier in the decade and might best be called a slow jobs “leak.” In the pages that follow, we draw upon newly available data to track businesses over time and dig deeper into the health of U.S. startups. We examine young companies’ size at birth, jobs

created, and survival patterns to draw inferences about the health of emerging companies in the United States. The patterns we find among young businesses show that recent U.S. startups are performing much worse than prior cohorts in terms of job creation.

Conventional wisdom about job growth tends to focus solely on the jobs that are being created at existing (typically big) companies. But as a wealth of recent research has shown,<sup>6</sup> new businesses are vital contributors to a healthy jobs market. Indeed, we know that, until the Great Recession, new firms in the United States generated on average about 3 million new jobs every year. While these firms typically follow a quick up-or-out pattern of success or failure, our analysis highlights for further scrutiny of some additional and, we believe, significant facts about the jobs actually created by new businesses.

6. See, for example, <http://www.nber.org/papers/w16300>.

## Note on Data Sources Used

In this paper, we primarily draw on data that are a part of three government time series. One such series comes from the U.S. Census Bureau's Business Dynamics Statistics program,<sup>7</sup> which allows for the tracking of new, independent business starts or firms. But, because of differences observed between these data and other more timely data, we also present establishment data from the U.S. Bureau of Labor Statistics' (BLS) Business Employment Dynamics program<sup>8</sup> and unpublished establishment data from the U.S. Census Bureau's Business Dynamics Statistics series.<sup>9</sup> Although the series have some surface contradictions, until it is clear which series is the most informative, we believe it best to present data based on all three time series and note the significant differences where they exist.

## Trends in Business Starts and Survival

Recent data on business dynamics from BLS and the Census Bureau have allowed researchers to closely track business startups. Especially important are "employer" firms because these businesses not only generate jobs for other workers in addition to their entrepreneurs, but also are more likely to scale to become a continuing source of job creation.

As shown in Figure 3, prior to the current economic crisis, the number of new employer businesses—those that provide work for individuals other than the founder<sup>10</sup>—mostly held steady or meandered upward over the several prior decades.<sup>11</sup> But, as shown in Figure 2, even before the overall economy started its most recent downturn, the number of new employer business births in the United States had peaked.

In fact, since 2006, the annual number of new employer businesses tracked in government statistics has plummeted 27 percent for new independent firms and approximately 23 percent when considering a broader measure of new "establishments" (new independent businesses *and* new expansions of existing businesses).<sup>12</sup>

Another important, but often overlooked, measure is the rate of business survival for all new firms as depicted in Figure 3.

Somewhat remarkably, the overall trend in this statistic was relatively stable prior to the Great Recession, with roughly 45 percent to 50 percent of new businesses surviving five years. Recent business births, however, are showing starkly lower survival rates. The survival data, whether measured at two

7. Data by firm age pulled from [http://www.ces.census.gov/index.php/bds/bds\\_database\\_list](http://www.ces.census.gov/index.php/bds/bds_database_list).

8. Data by establishment age pulled from [http://www.bls.gov/bdm/us\\_age\\_naics\\_00\\_table7.txt](http://www.bls.gov/bdm/us_age_naics_00_table7.txt).

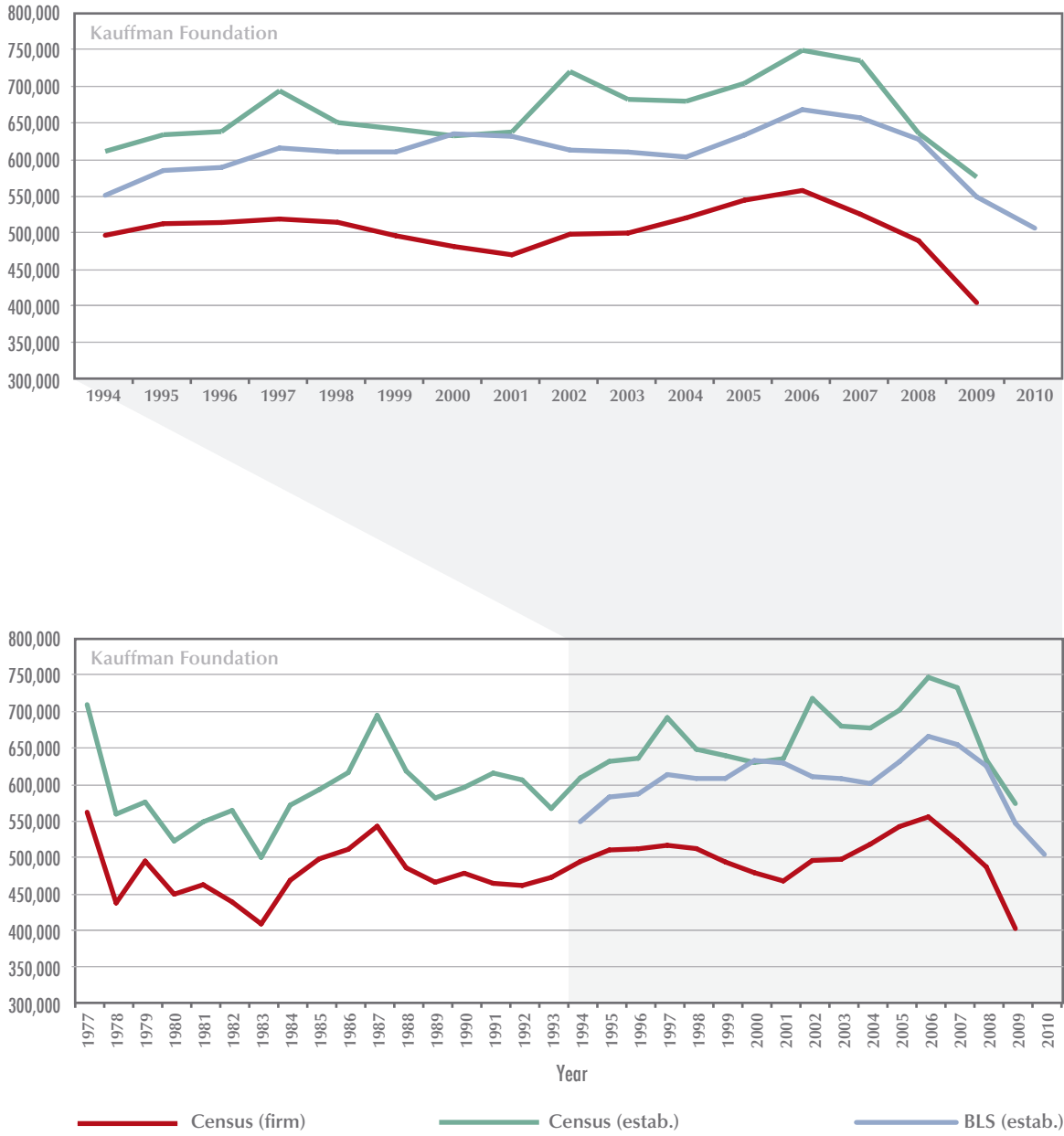
9. While this data on establishment age dynamics had cleared the Census Bureau's disclosure process, it was not published by the Census Bureau at the time of this research and was provided to assist in the investigation of some of the differing trends seen in the series.

10. A further discussion of the distinctions of employer and nonemployer firms and their relative sizes and impacts on the economy is available here: <http://www.census.gov/econ/smallbus.html>.

11. The Kauffman Index of Entrepreneurial Activity and the Small Business Administration's annual tallies are but two examples. These two measures are discussed in depth in other recent papers that are a part of Kauffman's Firm Formation and Economic Growth Research Series (<http://www.kauffman.org/research-and-policy/firm-formation-and-economic-growth-research-series.aspx>).

12. This trend differs significantly from Kauffman's own Kauffman Index of Entrepreneurial Activity (KIEA). The KIEA includes all types of business starts, both sole proprietorships and those firms engaging employees. The KIEA data suggest that the increase in the overall number of new firm starts in recent years has come from a rise in the former, not the latter.

Figure 2: U.S. Business Births (firms and establishments)

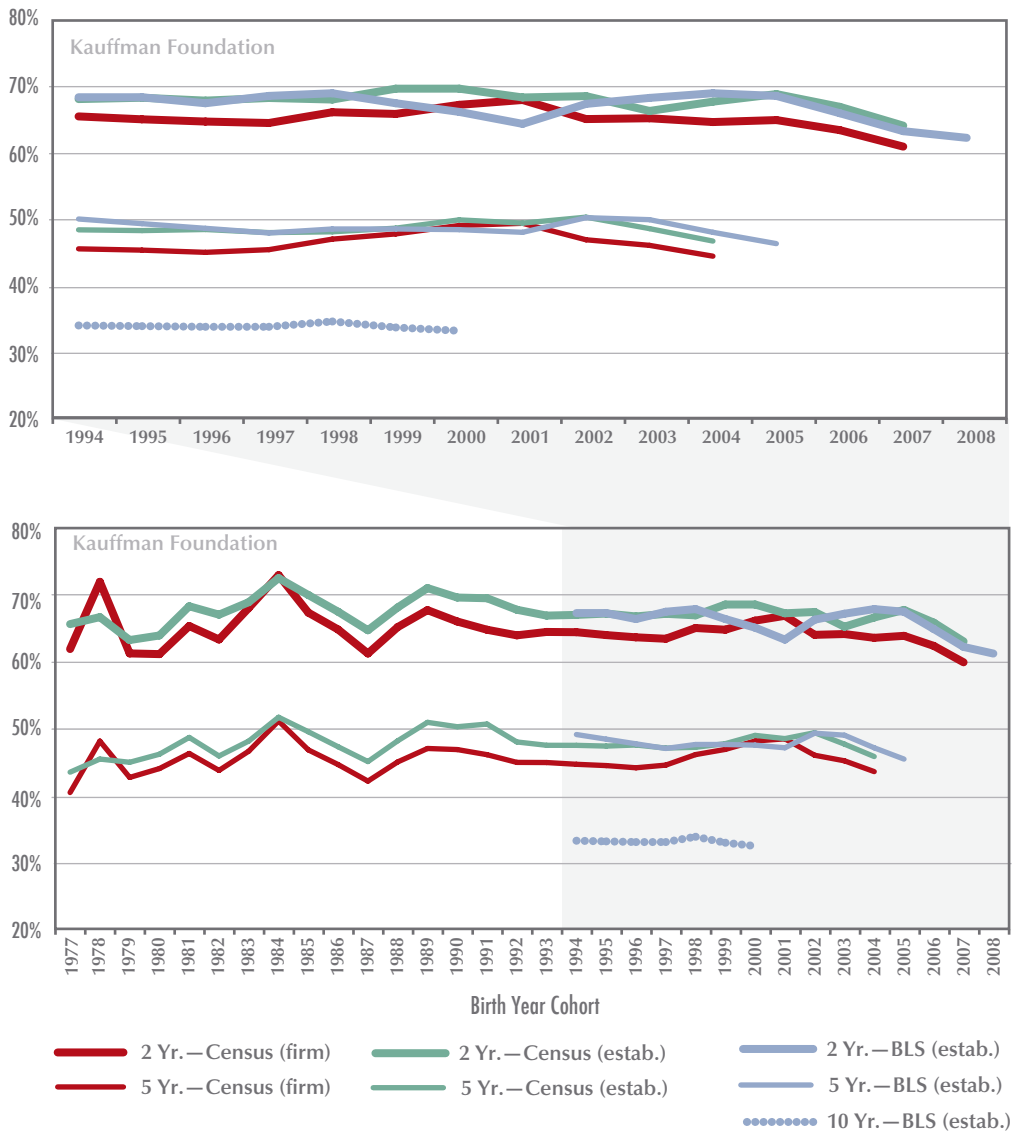


Source: Author calculations from Census Bureau's Business Dynamics Series (published series and unpublished establishment portions of the series) and Bureau of Labor Statistics' Business Employment Dynamics program.

years (61 percent for firms born in 2007, compared to about 65 percent for two-year-old firms in earlier periods) or five years (now under 45 percent for

firms born in 2004), indicate that recent cohorts of new businesses have been very hard hit by the 2007–2009 downturn.

Figure 3: Average Survival Rates of U.S. New Business Cohorts (firms and establishments)



Source: Author calculations from Census Bureau's Business Dynamics Series (published series and unpublished establishment portions of the series) and Bureau of Labor Statistics' Business Employment Dynamics program.



## Employment Trends

So far, we have looked only at the numbers of new businesses and their overall survival rates. What about the numbers of *jobs* that new businesses have created, and what are the trends in these data?

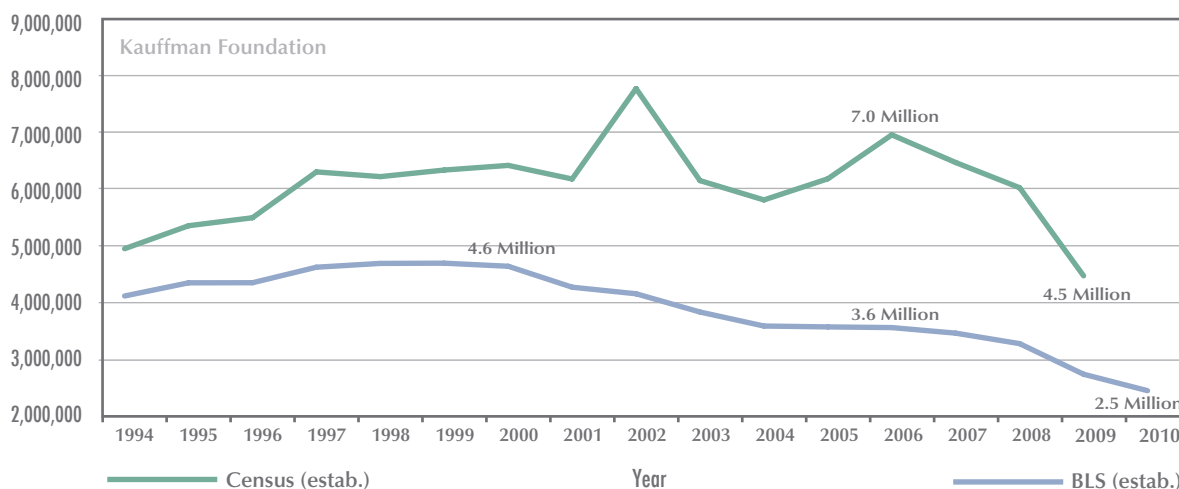
Because of unknown differences in the data sources from Census and BLS—a mystery we urge other researchers to tackle—employment within business cohorts is somewhat cloudy. The Census Bureau’s data on employment appear significantly more positive than the BLS data. But, rather than attempt to sort out the differences between the two series here, we simply present both, and urge readers to recognize that, despite the differences, the overall story in both series is disturbing.

To begin, we look at the aggregate numbers of jobs reported by all new businesses and new establishments (new plants or offices opened by

existing firms) in their birth year. This aggregate measure includes more than just new firms, but is nonetheless a useful indicator of the dynamism of the economy (Figure 4).

Figure 4 indicates that employment at new establishments, as measured in the BLS series, has moved steadily downward since about 2000. The data show an average peak of about 4.65 million new jobs [annually] from 1997 to 2000, compared with fewer than 2.5 million jobs at new establishments in 2010. Comparable Census figures show a much later—but steeper—decline in aggregate employment at new establishments, peaking in 2006 at just under 7 million jobs and then plummeting to less than 4.5 million by 2009. In the end, and despite the differences in timing, the two series show very similar annual declines of 2.2 million and 2.5 million new jobs, respectively, generated by new business establishments compared to recent peaks.<sup>13</sup>

**Figure 4: Total Aggregate Employment of U.S. New Business Cohorts (establishments)**



Source: Author calculations from Census Bureau’s Business Dynamics Series (published series and unpublished establishment portions of the series) and Bureau of Labor Statistics’ Business Employment Dynamics program.

13. It is expected because of industry differences that these two series should have some variations in levels; the differing nature of when they begin to measure employment declines was not expected.

Census also provides data on jobs created by new independent firms only (a subset of the establishment measure), which are displayed in Figure 5. These data also show a significant decline in job creation. According to the Census data, new firms generated steady job contributions of more

than 3 million jobs per year through 2008, but that number has since fallen substantially to 2.3 million in 2009, a decline of more than 700,000 jobs.

The big trend is unambiguous across all of the data series: *New business births have been contributing fewer jobs to the economy in recent*

Figure 5: Total Aggregate Employment of U.S. New Business Cohorts (firms)

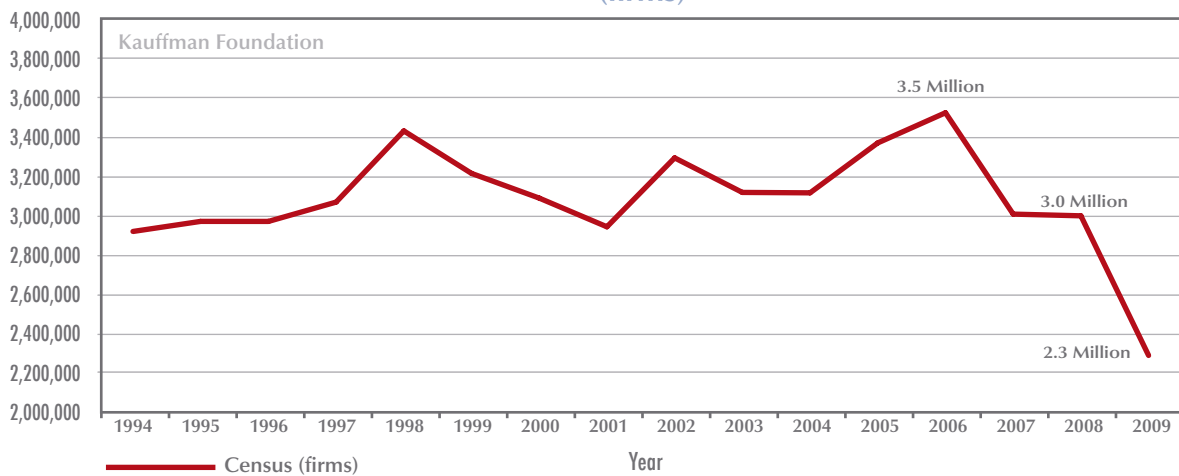
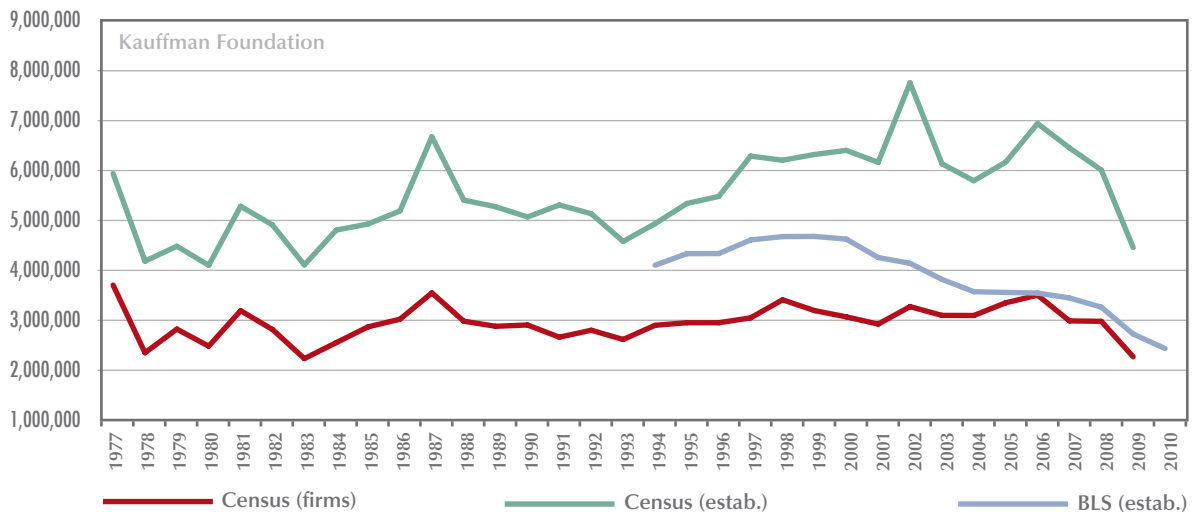


Figure 6: Total Aggregate Employment of U.S. New Business Cohorts (establishments and firms)



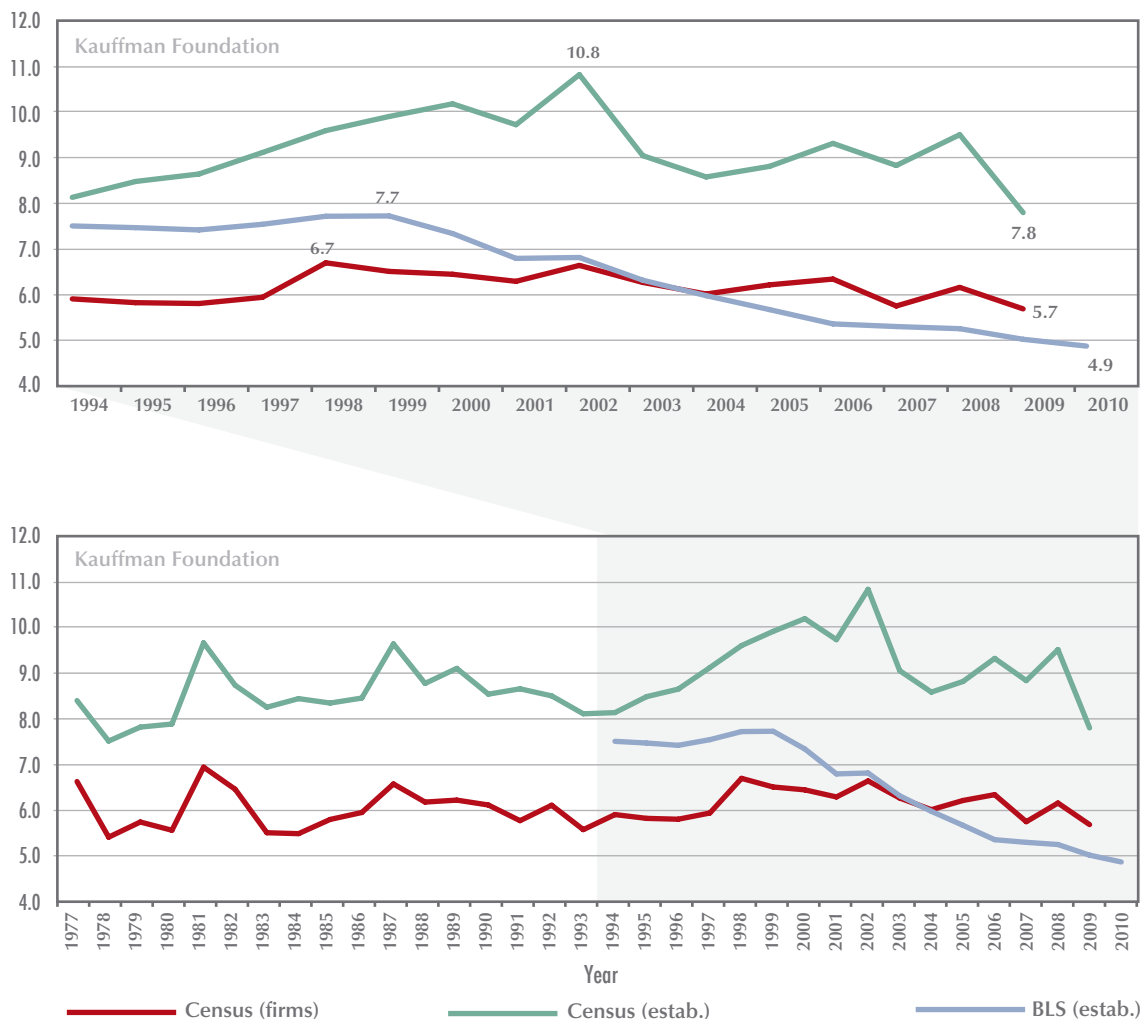
Figures 5 and 6 Source: Author calculations from Census Bureau's Business Dynamics Series (published series and unpublished establishment portions of the series) and Bureau of Labor Statistics' Business Employment Dynamics program.

years. Aggregate employment is suffering not simply because of falling numbers of new business starts, but also because average employment at each new firm is shrinking.

In Figure 7, BLS data show that new establishments opened their doors with about 7.5 jobs on average for much of the 1990s, a figure that has since declined to 4.9 jobs per new establishment. The Census data on establishments show a similar pattern over this same period,

but with different levels: Establishment startup size actually increased steadily from about eight employees per business to a peak of 10.8 in 2002, before falling to a steady range of about nine employees in the mid-2000s and then declining again in 2009 to fewer than eight employees per establishment. On the other hand, the firm-level statistics at Census show only a modest decline from a level of about six employees per firm over most of the last two decades.

Figure 7: Average Startup Size (establishments and firms)



Source: Author calculations from Census Bureau's Business Dynamics Series (published series and unpublished establishment portions of the series) and Bureau of Labor Statistics' Business Employment Dynamics program.

The aggregate and per-business numbers paint two similar narratives of why new businesses have been contributing fewer jobs. This falling contribution reflects both a drop in the number of new establishments and shrinking employment levels at these establishments. In both data series, the most recent year of data shows a cohort of new business that was smaller in number and in jobs created than in any cohort since 1994 and, in most cases, than any previously measured cohort in data dating back to 1977.

## Explaining the Employment Trends at New Businesses

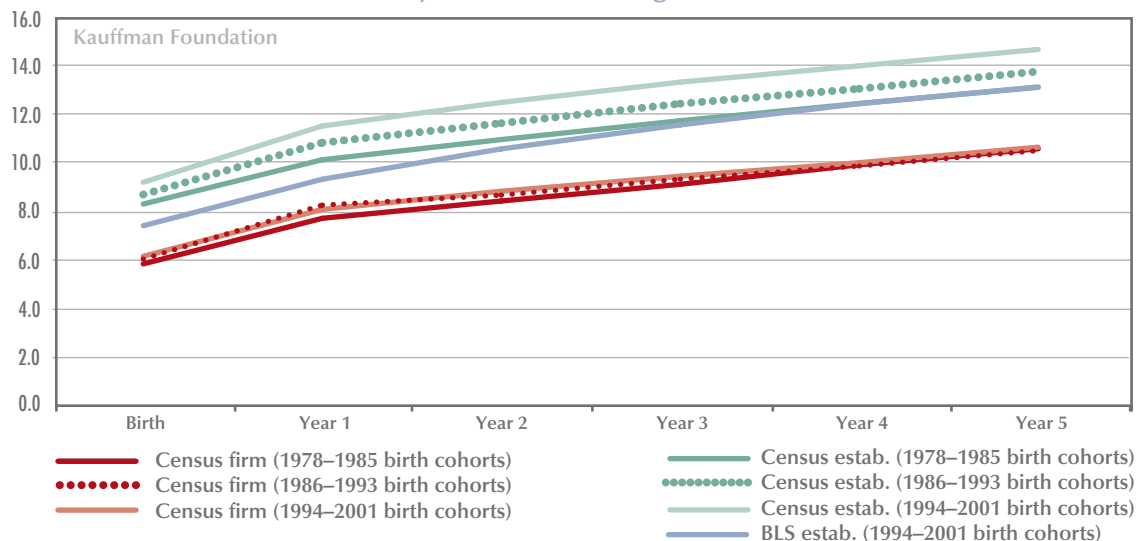
One hypothesis that could be advanced about recent new business starts is that, while they may be starting smaller (or leaner), as a group they will grow more rapidly over time. Indeed, there is ongoing debate over whether this hypothesis explains the

different patterns in entrepreneurship between Europe and the United States.<sup>14</sup>

Fortunately, new data from Census and BLS permit some testing of this hypothesis by tracking employment and survival of each cohort of new businesses over time. Business cohorts—all the businesses born in a particular year (and a particular circumstance)—are just like birth cohorts or generations; they tend to have some shared characteristics or imprinting. And, indeed, just like children that age, businesses that survive their early years tend to grow, on average, such that the following picture of average employment at a business over time appears (Figure 8).

In looking at the average employment of surviving firms or establishments through these growth charts, it should be noted that establishments and firms drop out of the cohort over time as they are acquired, close, or otherwise cease to exist. What Figure 8 shows, in all the data series and for both firms and establishments, is that those businesses that remain in operation tend to get bigger, not

Figure 8: Average Employment of Surviving Businesses as They Are Born and Age to Year Five



Source: Author calculations from Census Bureau's Business Dynamics Series (published series and unpublished establishment portions of the series) and Bureau of Labor Statistics' Business Employment Dynamics program.

14. <http://www.nesta.org.uk/library/documents/GrowthDynamicsWebv3.pdf>.

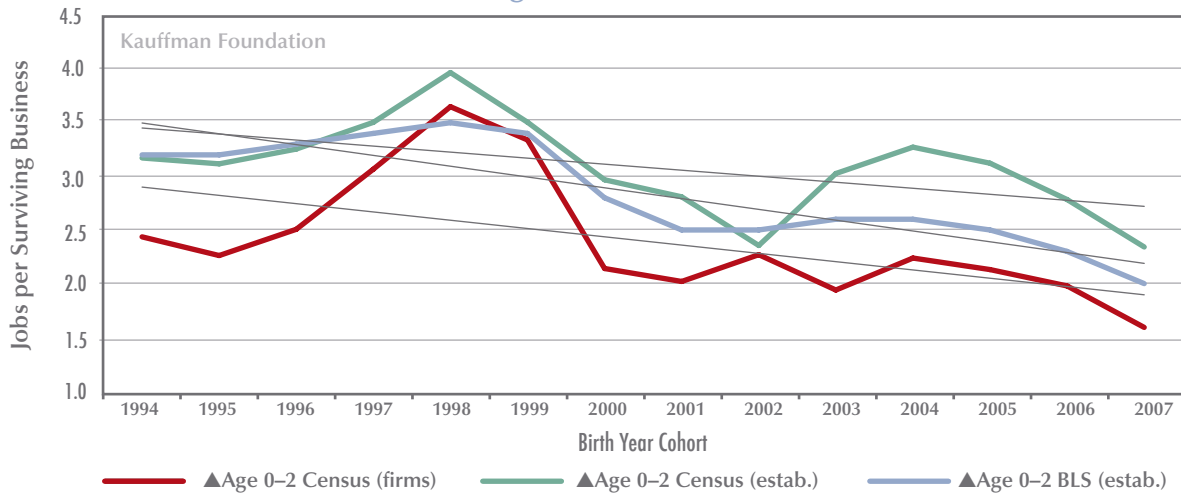
smaller, as measured by the number of people they employ.

We have broken the available time series into three distinct periods to show the similarities and also some differences in the trends over time. These growth charts allow us to expand our understanding of how young firms contribute to jobs as they age. Just as we presented some differences in how the BLS and Census series depict recent trends in

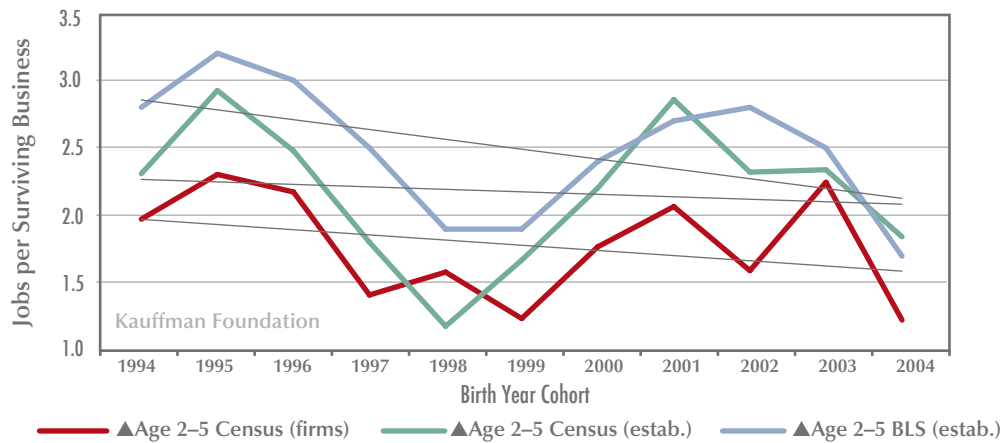
employment, we see differences in the growth charts. But, more important, in our view, are the similarities the data show. Specifically, we want to focus on the downward trends seen in all the series in the average rate of growth for new businesses since 1994.

Figures 9 and 10 present some mixed news. They show that, while new businesses that survive continue to be significant contributors

**Figure 9: Change in Size of Surviving Business from Birth to Age Two (establishments and firms)**



**Figure 10: Change in Size of Surviving Business from Age Two to Age Five (establishments and firms)**



Figures 9 and 10 Source: Author calculations from Census Bureau's Business Dynamics Series (published series and unpublished establishment portions of the series) and Bureau of Labor Statistics' Business Employment Dynamics program.

to employment as they age and grow, the rate (or slope of the trend line) of their employment additions has been trending downward for business cohorts since 1994. The average rate of employment growth from birth to age two and then age two to age five has been decreasing in all the data series, with only moderate yearly variation. So, while the levels might vary slightly in the different data series, the trends appear similar: *Businesses that survive their early years of existence have been adding jobs at a slower pace than the historic norm in recent years.*

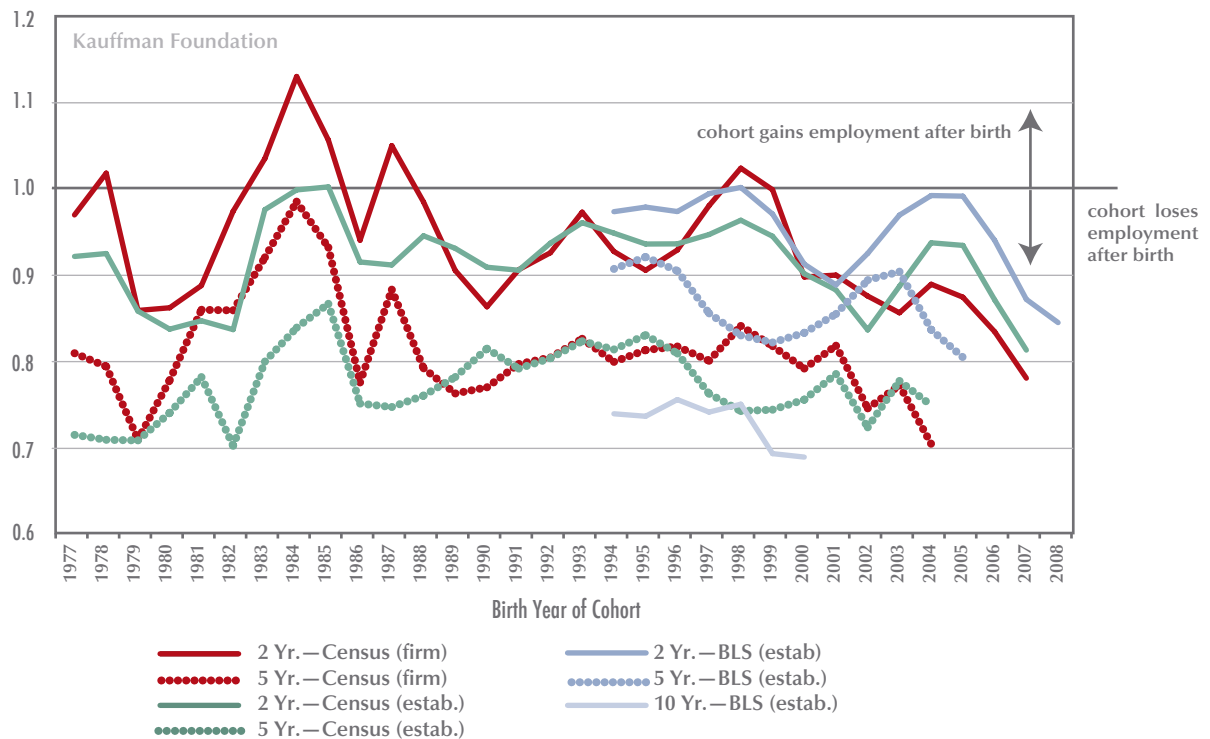
So far, we have examined data relating to the size of the *average business*. What about *aggregate employment of new business cohorts* over time?

Here we compare total employment of the cohort's surviving members over time to the baseline (birth) level of employment (Figure 11).

Both the BLS and Census data show a similar pattern. The business cohorts continue to shed more jobs in the aggregate than they add in total over the years (thus staying below 1 on Figure 11). This means expanding businesses did not compensate by adding employees at a fast enough pace for the business cohort to hold onto the total employment it started with once jobs at exiting businesses were accounted for.

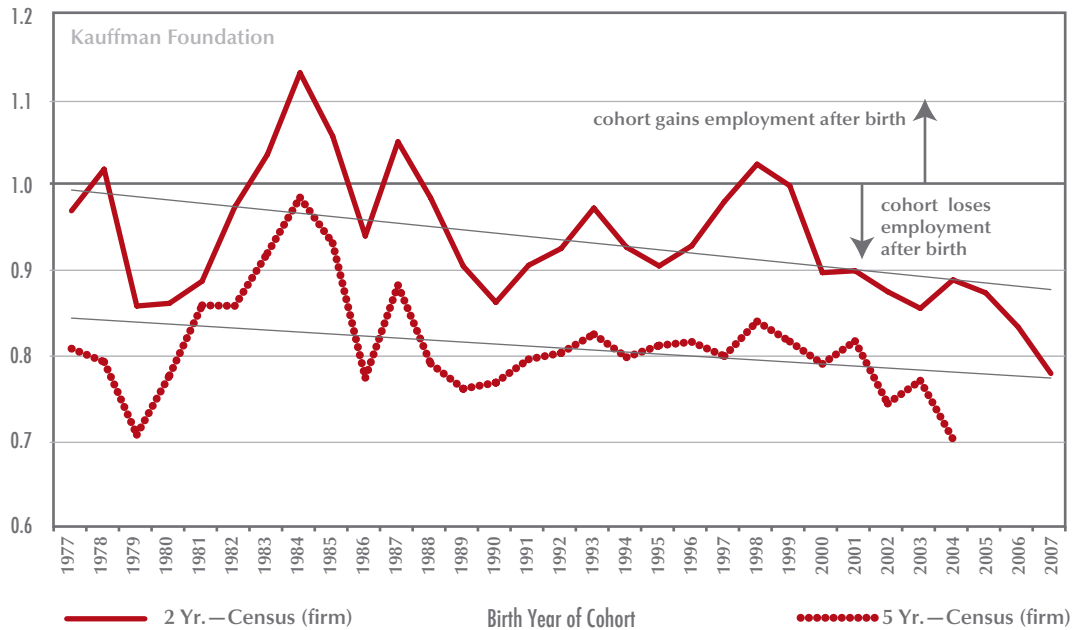
Figure 12 shows that, when measured at age two, cohorts of new firms born before 2001 retained

Figure 11: Total Employment of Cohort as Percentage of Base-Year Employment (establishments and firms)



Source: Author calculations from Census Bureau's Business Dynamics Series (published series and unpublished establishment portions of the series) and Bureau of Labor Statistics' Business Employment Dynamics program.

Figure 12: Total Employment of Cohort as Percentage of Base-Year Employment (census firms)



about 90 percent of their total employees. For the cohort born in 2007, the retention rate had dropped to less than 80 percent. Those same cohorts also retained fewer jobs at age five, down from the historical average of 80 percent prior to the 2001 cohort to slightly more than 70 percent in the most recent cohort (2004 firms). *That ten percentage-point decline in employment retention is equivalent to about 300,000 fewer jobs per business cohort.*

The degree of decline as establishments grow older differs somewhat between the Census

and BLS series. Census data show establishment cohorts shedding jobs more quickly (Figure 13) in the aggregate than BLS does (Figure 14). BLS shows establishments starting smaller, but holding onto jobs better. Census shows establishments starting larger, but shedding jobs faster. In the end, however, both series show a decidedly negative jobs growth picture in recent years.

Summing up, one key undisputed finding emerges: *The employment that a new business cohort is born with in the United States is likely the*

15. This finding is consistent with the data examined by Horrell and Litan (2010), showing that startup cohorts tended to keep about 80 percent of the jobs they initially created (though distributed differently among firms). See <http://www.kauffman.org/uploadedFiles/firm-formation-inception-8-2-10.pdf>. Additionally, it should be noted, although not presented here, this trend toward early maximum employment contribution holds true at the most common broad industry categories available in the data. Thus, while there is certainly some part of the story here which is attributable to changes in the industries in which new businesses are being formed, this particular trend appears true.

Figure 13: Total Employment of Cohort as Percentage of Base-Year Employment (Census establishments)

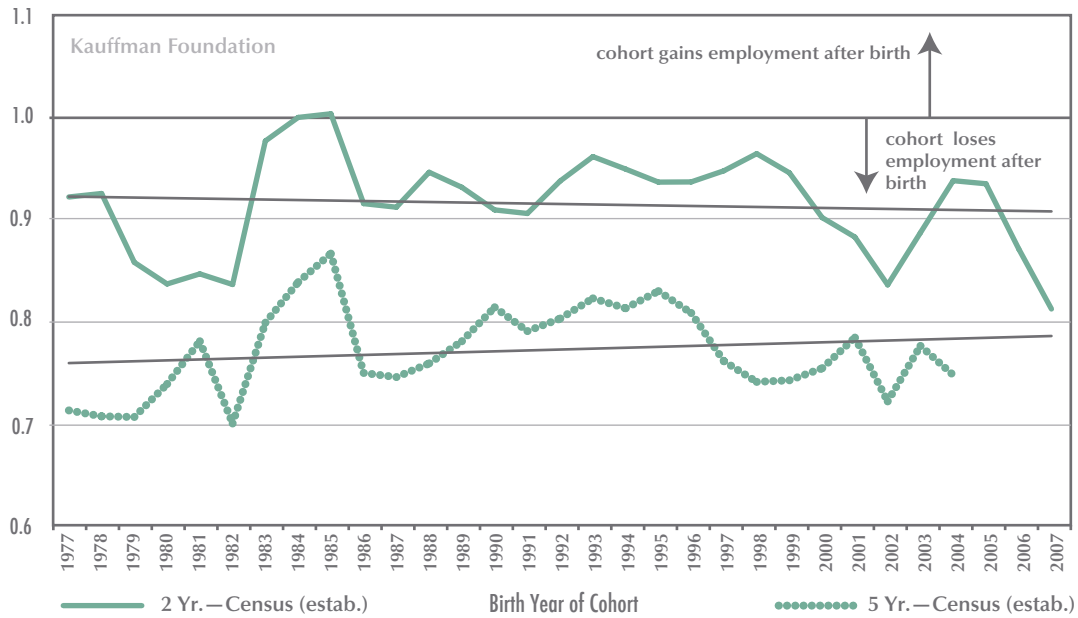
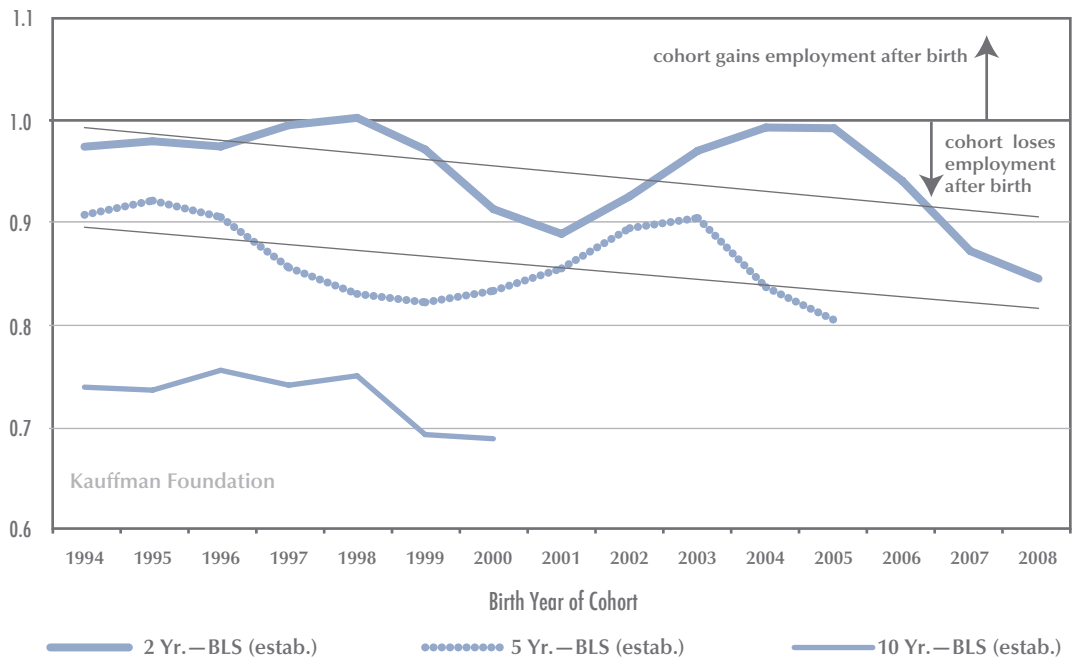


Figure 14: Total Employment of Cohort as Percentage of Base-Year Employment (BLS establishments)



Figures 12, 13, 14 Source: Author calculations from Census Bureau's Business Dynamics Series (published series and unpublished establishment portions of the series) and Bureau of Labor Statistics' Business Employment Dynamics program.



*maximum employment that business cohort will experience in its lifetime.*<sup>15</sup> That has been true even when new businesses were generating a greater number of jobs than they are now.

When we see shrinking trends in employment from new businesses generally, as shown earlier in the report, there is no evidence from the data series we have examined that the *aggregate* contribution of jobs from that business cohort will ever be anything except smaller, even though individual businesses may scale substantially. So, for example, for firms born in 2009, the 2.3 million jobs they created—a figure considerably below the recent historic norm—are likely to represent the peak level of this cohort’s contribution to U.S. employment. The relatively restrained job creation of new businesses in recent years will, therefore, have a substantial negative impact on longer-term employment levels.

## Limitations of This Research and Looking Ahead

It is important that we qualify our findings by noting the limitations of the available data. In this essay, we have presented trends only at the aggregate levels within the United States. There are limited data of the type we studied available for study in Europe, but we have not analyzed those yet and they are not strictly comparable across countries. Very few other countries have the capabilities to track business dynamics sufficiently to capture some of these trends.

Additionally, we are concerned about the divergence between the BLS and Census data in regard to employment, in particular, and urge researchers in the future to examine this issue. Indeed, without further exploration and improvements in these sources, it will be difficult to unpack the underlying drivers in some of the trends that could be related to increased firm-level productivity, shifting occupational/employment needs at the firm level resulting from information technology, globalization, and other drivers, or, more likely, some combination of all of the above factors and others not yet recognized.

Finally, it should be noted that we were only able to examine the aggregate and average data in the datasets, which might not be telling the whole story. A fuller examination of the micro-data would look at shifts in the full distribution of entry and growth patterns over time to see if the jobs problem comes more from shrinking numbers of scale entrants or a relatively even downward trend across all firms. While we characterize the process uniformly as “up or out,” there is actually a lot of variation at the firm level over time that merits further study.

Nonetheless, the conclusions from the data analyzed here are pretty clear, and they are not heartening. Employer businesses have been starting in fewer numbers, with fewer employees, growing slower, and, therefore, generating increasingly fewer new jobs for the U.S. job market. Furthermore, cohorts of businesses are just like cohorts of people. Once they are born, many of their characteristics are fairly well imprinted. In the case of the United States, business cohorts’ peak employment contributions almost always occur in their birth year. Thus, the falling contribution of new businesses to job creation will be felt for years. If these business cohorts follow historical trends, we can expect them to contribute fewer jobs for at least their first decade. Already recent cohorts of new businesses have experienced historical lows in their ability to retain jobs. While these trends are not written in stone, changing these patterns will not be simple.

At a time when policymakers are focused on finding solutions to sluggish employment growth, the role of young firms and establishments on broader employment growth is poorly understood and appreciated. Two implicit assumptions in the debate about jobs, which we believe are wrong, deserve mention.

First, policymakers’ focus on big changes in employment because of events such as a new manufacturing plant or the recruitment of a business to a community ignore the more important fact that our jobs outlook will be driven more by the collective decisions of the millions of young and small businesses whose changing employment patterns are not as easy to see or influence.

Second, it is just as easy to be deluded into thinking that the jobs problem will be solved by

16. This recent article also highlights some of these issues: <http://www.csmonitor.com/Business/2011/0613/Freelance-jobs-Half-of-all-new-jobs-in-recovery>.

growth in the number of the self-employed. The last decade has brought about some fundamental shifts in U.S. labor markets, including the rise of outsourcing, not just to foreign locations.<sup>16</sup> In many cases, companies or individuals that once would have been hired as employees of a business now are performing the work on a temporary basis as contractors through other professional service organizations or under their own self-employment contracts. These individuals, while sometimes characterized as “entrepreneurs,” are not likely to employ others or to reach significant scale. No matter how laudable their individual efforts, these sole proprietors, almost by definition, are not likely ever to be major employers.<sup>17</sup>

The clear challenge for the U.S. economy instead is to *start more employer businesses, ensure that they are starting larger, and nurture their growth.*

---

17. Indeed, in this study we have ignored self-employment patterns other than as included in the Kauffman Index of Entrepreneurial Activity. Earlier work, some of which Kauffman has sponsored, has attempted to better integrate data on the self-employed with the business data examined here (See <http://ideas.repec.org/p/cen/wpaper/06-04.html>). Although this study shows that a non-trivial percentage of employer businesses have histories, including a period of self-employment, larger-scale jobs growth for the economy as a whole is not likely to emerge from an increase in self-employment.



KAUFFMAN  
The Foundation of Entrepreneurship

4801 ROCKHILL ROAD  
KANSAS CITY, MISSOURI 64110  
816-932-1000  
[www.kauffman.org](http://www.kauffman.org)