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Where Will The Jobs Come From?

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Where Will The Jobs Come From?
An Examination of America’s Most Reliable Source of Employment.

Joseph Keogh
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Introduction

In December of 2007, recession struck the United States. Although the recession was spawned by an American financial crisis, and first affected the United States, it quickly became an international concern. In 2009, the International Monetary Fund identified the economic decline to be a global recession and noted “the global economy is experiencing its greatest downturn in 50 years.” (International Monetary Fund, 2009)

In the opening month of the recession American employment peaked at nearly 94.3 million. The unemployment rate, which had held steady at 4.7 percent for the three months prior, rose to 5. The recession lasted into June 2009. (U.S. Bureau of Labor Statistics, 2012) Yet the worst employment situation it spanned are found in its closing months. The highest recession unemployment occurred in June 2009, the recession’s final month, at 9.5 percent. Yet the lowest number of employed Americans in this year and a half was 89.5 million, seen in March of 2009, accounting for a loss of 4.8 million, or one in every twenty jobs present at the recession’s start.

The end of the recession did not see an immediate, or as of yet even eventual return to normalcy. After June 2009, the unemployment rate continued to climb, and the number of employed Americans continued to fall. Unemployment peaked at 10 percent in October 2010, a full four months into the “recovery”, and employment count continued to sink, hitting its low the following January, at 87.8 million jobs. From the recession’s beginning to the employment low in January 2010, U.S. employment had fallen 6.8 percent, or 6.5 million jobs.
Figure 1

Figure 2
Currently, the United States has surpassed its pre-recession number of employed residents. The preliminary data for December 2013, the most recent available claims 96.9 million employed. This defines a 2.8 percent or 2.6 million job increase since December 2007. Yet more residents are searching for work, and the job market has become more competitive. This is evidenced by the failure of the unemployment rate to sink to pre-recession levels. While the share of the American labor pool still in search of work has been declining steadily, from 7.9 percent at the start of 2013, December still saw a 6.7 percent unemployment rating, a full two points above the previously held 4.7. The result, that America is still in the midst of the period of recovery following the Great Recession, is quite alarming considering the date of the recession’s close, some fifty-four months ago.

In a 2013 poll conducted by Gallup, on the 5th-8th of September, 21% of Americans who were asked the question “What do you think is the most important problem facing this country today?” responded that jobs and unemployment were the most pressing issue in America (Gallup). How to recover the jobs lost in the recession is a point of contention in the American political process, and is a concern present in the mind of many citizens on Election Day.

The question of employment is inseparable from how America conducts itself politically. In modern America, legislators’ actions are often swayed by pressure to make more abundant and more lucrative employment available to their constituents. In turn, speculation as to how a candidate will affect the local, state, or federal job market is often a factor in a voter’s decision. Polls by the PEW Research Center found that a vast majority of voters, 80 percent in the 2008 elections, and 83 percent in 2012, rated the employment issue as “very important” to deciding their vote. Another poll taken in September of 2012 showed that the issue was “very important” to 74 percent of swing voters (Pew Research Center for the People and Press, 2012).

With job creation occupying such a critical role in our political structure, it’s important that the electorate be informed on the issue, in order to more effectively improve the job market
through choice of candidate. To begin to understand how to aid the job creation, this discussion examines the sources of net job creation, and how their work might be accelerated. It takes the position that the solution lies in repeated introduction of new firms as a method of outfitting the American economy with the innovation it requires to remain competitive. Specifically, it recognizes that new firms represent the largest source of net job creation present in the American economy in recent decades.
Data

The Business Dynamics Statistics

This discussion, recognizing the statistical significance of net job creation in young firms, requires a dataset that allows for the examination of how employment and other indicators vary with the bodies of firms grouped by age of the member firms. This need has been met best by the relatively young Business Dynamics Statistics database, published by the U.S. Census Bureau. The Business Dynamics Statistics (BDS) is “compiled from the Longitudinal Business Database (LBD). The LBD is a longitudinal database of business establishments and firms covering the years between 1976 and 2011.” (U.S. Census Bureau) Data in the BDS is available from 1977 to 2011.

What is available through the BDS?

The BDS dataset allows for the examination of a number of indicators of the business environment in the United States, such as number of firms, number of establishment (physical business locations), employment count, and various employment dynamics such as the number of jobs created, the number of jobs destroyed, and the corresponding net job creation, which serve as important figures to the discussion.

The BDS also allows for examining these indicators across a number of divisions such as firm age, firm size, and nine of ten 2-digit SIC (Standard Industrial Classification) industry divisions. All data, for all divisions, is listed for each individual year, from 1977 to 2011.

BDS Data Used

With the focus of the portions of this discussion that use the BDS being startups and young firms, the firm age tables bear the most relevance, and are referenced most frequently. Twelve distinct firm age categories are present in the Firm Age tables of the Census Bureau’s
Business Dynamics Statistics, each representing the number of years for which a firm has existed on the indicated year’s annual collection date for the dataset, March 12th.

- 0
- 1
- 2
- 3
- 4
- 5
- 6-10
- 11-15
- 16-20
- 26+
- LEFT CENSORED

The “LEFT CENSORED” category serves as just another age category, having no pertinence to censorship of classified or otherwise sensitive information. As the dataset from which the BDS is derived, the LBD, only starts its coverage at 1976, the Census can only verify the ages of those firms established after the starting date of the LBD. As such, the only categories displaying the presence of any firms in 1977 are the “0” and “LEFT CENSORED” fields, where “LEFT CENSORED” houses all firms that were one year or older in age on the annual data collection date, March 12th, in 1977.

To limit the scope of the examination, some fields offered by the BDS, and relationships between certain fields, were not examined. The information that concerns this discussion most is that which describes job creation in firms, survivability in firms. Also of concern is the number of jobs created in surviving firms at a number of stages in their development. The fields referenced in this discussion are:
• “Year”, indicating the year to which data corresponds
• “Firm Age”, indicating the firm age category to which data corresponds
• “Firm Size”, indicating the firm size (in employees), to which the data corresponds.
• “Firms”, which holds a count of firms in a given year and category
• “Emp”, which holds a total count of employment in a given year and category
• “Job_Creation”, the absolute number of jobs created in a given category between year $t$ and $t-1$.
• “Job_Destruction”, the absolute number of jobs created in a given category between year $t$ and $t-1$
• “Net_Job_Creation”, net jobs gained in a in a given category between year $t$ and $t-1$ (the difference between “Job_Creation” and “Job_Destruction”)
• “Firmdeath_Firms”, the number of firms that ceased existing in a given category between years $t$ and $t-1$. Deaths of firms that would have been in another category in year $t$ than they were in year $t-1$ contribute to the deaths of the category to which they would have belonged in year $t$.
• “Firmdeath_Emp”, employment lost in firms that ceased existing in a given category between years $t$ and $t-1$. Deaths of firms that would have been in another category in year $t$ than they were in year $t-1$ contribute to the deaths of the category to which they would have belonged in year $t$.

Other data displayed in course of the discussion may be derived from these values.

**Limitations of the BDS dataset**

Perhaps the greatest need for descriptions of the data used in this discussion arises from imperfect measures used due to limitations in the data itself. Described in this section are why, in portions of this discussion, certain categories were chosen or omitted. It also describes
why certain time samples were chosen, and to illustrate that such decisions were both
deliberate, and appropriate given the nature of the data available.

*What Industries and Employees are Included?*

The Census Bureau defines what industries and individuals are counted in the Business
Dynamics Statistics.

Those firms included in the dataset are those in identified to be in the following industries
(U.S. Census Bureau).

- Agricultural Services, Forestry, and Fishing
- Mining
- Construction
- Manufacturing
- Transportation and Public Utilities
- Wholesale Trade
- Retail Trade
- Finance, Insurance, and Real Estate
- Services

The Census Bureau lists the following industries and individuals as not being among
those counted in the BDS (U.S. Census Bureau):

- Self–employed
- Domestic service workers
- Railroad employees
- Agricultural production workers
- Most government employees
- Employees on ocean–borne vessels
- Employees in foreign countries
The Firm Age Tables and Sampling Difficulties

Economic conditions are far from static, and figures and effects detailed in any single year, or any poorly chosen sample, could lead to inaccurate analysis or fail to reflect reality. Internet, growing interconnection between markets around the world, and other changes in the economic environment through technology and regional or global policies and conditions make the world of 1977 a different one from that of 2011. Risk of the presence of a substantial change in the business environment, grows with the time sample for which the data is observed. Such changes could alter trends in various indicators, biasing results, possibly rendering conclusions invalid. Similarly, sampling too small a sample, or poorly selecting elements of a sample could allow conclusions to be drawn that are true of the sample, but would be incorrect if applied more generally.

Sampling of the Firm Age tables is further restricted, as not all age categories are present for all years. As mentioned above, in 1977, firms only existed in two age categories: “0”, and “LEFT CENSORED”. This is significant, as startups can be averaged from the years 1977-2011 to obtain a typical number of startups in the United States at a given time. However, if one were to attempt to find the typical number of two year old firms in the U.S. for a given time by averaging over the same sample, one would arrive at a lower number than would be accurate, as 1977 and 1978 both record zero firms two years of age. This is not to suggest that no firms two years of age exist, yet because their birth would be prior to March 12th, 1976, they contribute to the “LEFT CENSORED” figures. This discrepancy can be hard to reconcile, if one wants to display similar, yet well sampled information for all age categories, as some age categories have only had member firms in very recent years,

- Firms of age “0” and “LEFT CENSORED” are first counted in 1977
- Firms of age “1” are first counted in 1978
- Firms of age “2” are first counted in 1979
• Firms of age “3” are first counted in 1980
• Firms of age “4” are first counted in 1981
• Firms of age “5” are first counted in 1982
• Firms of ages “6-10” are first counted in 1983
• Firms of ages “11-15” are first counted in 1988
• Firms of ages “16-20” are first counted in 1993
• Firms of ages “21-25” are first counted in 1998
• Firms of ages “26+” are first counted in 2003

Thus, to be able to display average values for firm count, employment, and net job creation across all firm age categories, with consistent time samples, one could only sample from 2003-2011 to avoid the averages being reduced by zeroes, prior to the year which firms first qualify for a category. This is a 27 years in which data is lost. For indicators involving firm deaths, data does not exist for the “26+” category until 2004. This time sample, 2003-2011, covering a single cycle of economic expansion and contraction, while not ideal, would be workable if these were the only practical restrictions on time samples in all age categories.

![Number of Firms, Age 21-25](image)

Figure 3
Source: U.S. Census Bureau, Business Dynamics Statistics
Not all firm age ranges are full at all times. While startup data may be sampled from its first appearance in the BDS, 1977, without statistical inconsistencies, the same is not true for all age categories. Figure 3 shows the number of firms in the “21-25” firm age category, in each year from 1998 (the first year firms appear in this category) to 2011. While the number of firms eventually settles between 30,000-40,000, it is less than 10,000 in 1998. From there it appears to climb linearly until it finally corrects by 2002. This is because before 2002, this firm age category has not yet achieved a sort of steady state, where it contains firms of all ages that it claims to, and firms are aging out of the category. The first year, 1998, is just twenty-one years after the first startups were recorded in the dataset. Therefore, no twenty-two year old firms appear outside of the “LEFT CENSORED” category, and the “21-25” age category only holds firms that are 21 years of age. Thus, while firms age into the age category, none are old enough to age into the next one, and the only loss in firms is attributable to firm death. The number of firms does not correct until five years later, when the category first holds firms that are twenty-five years of age. All firm age categories that contain a range of ages (or for which a firm can be categorized in more than one year) a period of instability in number of firms and other indicators, usually exhibited as a growth period as no firms are old enough to age out of the category, only in.

- Categories “0”, “1”, “2”, “3”, “4”, and “5” need no time to reach steady state, as all firms that are displayed in one of these categories one year have either advanced a firm age category or died by the next.
- Category “6-10” achieves steady state in 1987
- Category “11-15” achieves steady state in 1992
- Category “16-20” achieves steady state in 1997
- Category “21-25” is first full in 2003
Most trends and averages established for these firm age categories that incorporate data from before a steady state is achieved will be biased by the growth period.

The categories “26+” and “LEFT CENSORED” further complicate the sampling issue, as these categories remain unstable. As a result of how they are defined, they will remain so indefinitely. For the time being, the “26+” category is the oldest of the numbered age ranges. As such, firms may never age out, making any true steady state, such as those seen by the other categories impossible. Figure 4 suggests the pool of firms over twenty-six years of age, at least for most of the past decade, to be continuously increasing in a linear fashion. It is likely that as it fills with older firms and accounts for a greater share of all firms a different steady state will manifest. As firms aging out can never account for any firm loss in this category, the rate of firms aging into the “26+” category must be offset by firm deaths. It is more likely that, in the future, the “26+” category will be replaced by a “26-30” and a “30+” category. Until then, however, the number of firms in the “26+” category will continue to climb, along with other indicators, making any reliable time-independent trends or averages relying on categorical stability impossible for this portion of the economy.

![Number of Firms, Age 26+](source: U.S. Census, BDS, Firm Age Tables)
The “LEFT CENSORED” category also displays instability, but of an opposite nature. As this category contains only those firms predating the first startups that appear in 1977. No new firms may enter this category. As such, this category is doomed to an extended atrophy, and may only achieve a steady state if all such firms die. Until this happens time independent trends cannot be reached by averaging an indicator over any time sample, similar to the “26+” category.

![Number of Firms Predating March 1976 (“LEFT CENSORED”)](image)

**Figure 5**
Source: U.S. Census, BDS, Firm Age Tables
Firm Dynamics

Much of the analysis on this subject has focused on sector and business size. There is surely some value to these discussions. In 2011, firms with fewer than 500 employees accounted for 49% of total employment in the United States\(^1\), and certain sectors expand while others contract. No perfect set of sources for job creation has yet been discovered and utilized, so our discourse can only hope for more accurate analysis, at least for the moment. The Business Dynamics Statistics published by the Census Bureau is helpful in the examination of the role of brand new firms and the growth they exhibit in subsequent years as an important source of jobs in the American economy.

Startups

The process of firm creation plays a critical role in keeping the American economy afloat. The modern United States is riddled with tremendous national or even international firms. A number of industries are run by oligopolies of household names, such as Apple and Microsoft, which together produce the operating systems for 94.3% of devices that used the internet in December of 2013, with 80.3% produced by Microsoft alone\(^2\). Goliath firms such as these may appear to be immovable. But the picture painted by Timothy Bates appears to favor David instead: “Faced with competitive threats rooted in changing circumstances, decisions are based upon strategies rooted in the past” (Bates, 2008).

The innovation required to engage these changing circumstances is often found in new firms. These new firms, or startups, often spawn from such innovation, and lack the institutional memory that can lead an older firm to use outdated strategies.

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\(^1\) Author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Size Tables, Published by the U.S. Census Bureau, accessible here: [http://www2.census.gov/ces/bds/firm/bds_f_sz_release.xls](http://www2.census.gov/ces/bds/firm/bds_f_sz_release.xls)

\(^2\) Author’s calculation using w3schools.com’s OS Platform Statistics, available here: [http://www.w3schools.com/browsers/browsers_os.asp](http://www.w3schools.com/browsers/browsers_os.asp)
To effectively analyze the effects that entrepreneurship and startup creation have on employment, a clear definition for what constitutes a “startup” is needed. This discussion defines startups as firms less than one year old\(^3\).

**Share of Employment in Startups**

Looking at employment share at any given time, startups account for roughly ten percent of all firms in the United States, but only about two to three percent of the nation’s employment, as shown in Figures 6-9, as well as Table 1\(^4\).

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Startups</th>
<th>Number of Firms</th>
<th>Employees in Startups</th>
<th>Employees in all Firms</th>
<th>Share of Firms that are Startups</th>
<th>Share of Employment in Startups</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>451,592</td>
<td>3,606,747</td>
<td>2,504,689</td>
<td>74,756,283</td>
<td>12.5%</td>
<td>3.35%</td>
</tr>
<tr>
<td>1985</td>
<td>509,162</td>
<td>3,975,823</td>
<td>2,942,849</td>
<td>80,893,756</td>
<td>12.8%</td>
<td>3.64%</td>
</tr>
<tr>
<td>1990</td>
<td>480,684</td>
<td>4,314,053</td>
<td>2,927,742</td>
<td>92,584,375</td>
<td>11.1%</td>
<td>3.16%</td>
</tr>
<tr>
<td>1995</td>
<td>513,073</td>
<td>4,616,894</td>
<td>2,976,674</td>
<td>98,519,583</td>
<td>11.1%</td>
<td>3.02%</td>
</tr>
<tr>
<td>2000</td>
<td>481,985</td>
<td>4,837,344</td>
<td>3,101,975</td>
<td>112,632,348</td>
<td>9.96%</td>
<td>2.75%</td>
</tr>
<tr>
<td>2005</td>
<td>549,264</td>
<td>5,185,639</td>
<td>3,412,890</td>
<td>115,516,387</td>
<td>10.6%</td>
<td>2.95%</td>
</tr>
<tr>
<td>2010</td>
<td>389,701</td>
<td>4,998,059</td>
<td>2,435,999</td>
<td>111,056,541</td>
<td>7.80%</td>
<td>2.19%</td>
</tr>
</tbody>
</table>

\(^3\) As the Firm Age Tables of the BDS are used in this discussion, and are used to identify startups, some startups will never appear in the tables. As the data used in the BDS is collected annually on March 12\(^{th}\), any firms that are born after March 12\(^{th}\) of any year, and die before March 12\(^{th}\) of the following year cannot be identified.

\(^4\) Figures in this paragraph are the author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here: [http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls](http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls)
2011 Firm Age Makeup of the United States

Figure 6
Source: U.S. Census Bureau, Business Dynamics Statistics, Firm Age Tables

1992-2011 Average Firm Makeup of the United States

Figure 7
Source: Author’s Calculations of U.S. Census Bureau, Business Dynamics Statistics, Firm Age Tables
Figure 8
Source: U.S. Census Bureau, Business Dynamics Statistics, Firm Age Tables

Figure 9
Source: Author's Calculations of U.S. Census Bureau, Business Dynamics Statistics, Firm Age Tables

2011 Employment Makeup by Firm Age

1992-2011 Average Employment Makeup of the United States by Firm Age
The average number of firms and average employment cannot be easily portrayed
between all firm categories in an accurate fashion, at least in the form of the total value of all
firms in an age category. This is due to the lack of a steady state in the “26+” and “LEFT
CENSORED” categories, as explained in the Data section of this discussion. If these age
categories are to be included independently, their inclusion must represent the most recent
composition of the United States economy. Given the linear expansion of the “26+” age
category, such data can only be accurate using 2011 as the sole sample year, or sum all age
categories that have not achieved steady state by the first year of the sample. Figures 7 and 9
employ a sum of all firms 16 years of age or older, to allow for 1992 to 2011 averages to be
accurately calculated, as will be the norm for other such cases, that would be affected by
definitional expansion or contraction in an age category, to avoid such biases.

The reason for the inclusion of startups in this examination as a potential source and
method for increasing employment levels in the United States is not due to the total employment
in such firms. This should be evident by the lesser share of total employment which this firm
age category holds. The data that highlights the significance of such firms is the relative size of
their net job creation, relative to other firm age categories.

**Share of Net Job Creation in Startups**

Startups account for the creation of an average of 2.96 million jobs a year, if averaged
from 1977 to 2011. This number is marginally higher (about 20 thousand more jobs per year) if
averaged from 2000 to 2011\(^5\).

This is due, in part, to a definitional advantage enjoyed by the startup firm age category,
and the statistical significance is, in part, due to the method used to arrive at the net job creation
data. According to the Census Bureau’s **CONCEPTS AND METHODOLOGY** for the BDS, the job

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\(^5\) Figures in this paragraph are the author’s calculation using data from the July 2013 release of the
Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here:
[http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls](http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls)
creation data is “the sum of all employment gains from expanding establishments from year \( t-1 \) to year \( t \) including establishment startups” (Business Dynamics Statistics: Overview). Conversely, the job destruction rate is defined as “the sum of all employment losses from contracting establishments from year \( t-1 \) to year \( t \) including establishments shutting down” (Business Dynamics Statistics: Overview). Net job creation is the difference between these two measures.

Employment for year \( t-1 \) is zero in the case of an establishment that did not exist the previous year. For such an establishment to report job destruction would imply a negative number of people employed at such an establishment. Therefore, firms and establishments less than a year cannot report anything but positive net job creation.

This is a very significant share of job creation to the United States. The 2.96 million annualized jobs produced in startups each year, is 77% higher than the 1977 to 2011 average of 1.67 million net jobs produced annually in the entire U.S. economy. Using a more recent time sample, the 2000 to 2011 average of 2.98 million jobs created annually in startups is 253% greater than the entire U.S. economy’s average of less than 845 thousand net jobs created, taken over the same period. From this two conclusions may be drawn. First, other firm age categories must exist as net job destroyers in any given year. Second, if net job creation is greater in startups than in the entirety of the United States economy (including contribution from startups) then the body of jobs contributed by other firm age categories must be, on average, negative, as evidenced in Figures 10 and 11.\(^6\)

---

\(^6\) Author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here: http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls
Figure 10 superimposes the net job creation present in all age categories (the “ALL” firm age category in the BDS) over that net job creation present solely in startups (the “0” firm age category in the BDS) for each year. Figure 11 illustrates the difference between the two. These figures illustrate the strength in startup job creation relative to the U.S. economy as a whole.

The claim that net job creation in the U.S. economy is negative, on average, is true. From 1977 to 2011, the economy without startups lost an average of 1.3 million jobs per year. Without the constant bombardment of new jobs posed by startups, totaling and estimated 45.5 million jobs lost in the 35 years for which data has been released. Only in eight of those years (1977, 1978, 1979, 1984, 1995, 2000, 2006, and 2011) was the aggregate net job creation of all non-startup firms positive.7

How great is the disparity between net job creation in startups and the rest of the economy? From the 1977-2011 average, if the United States failed to see any startup creation

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7 Author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here: http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls
in a given year, it could expect a net loss of 1.30 million jobs that year. But as noted above, perhaps due to the recent economic recession, startups have accounted for a much greater share of the economy in the twenty-first century: a share almost exactly twice as great. Using the twenty-first century average, the U.S. economy, sans startups, would expect to lose 2.14 million jobs.\footnote{Author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here: \url{http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls}}

![Net Job Creation in Firms Age 1 or Older](image)

**Figure 11**

*Source: Author’s Calculations of U.S. Census Bureau, business Dynamics Statistics, Firm Age Tables*

Figure 12 highlights an interesting implication for the statistical significance of startups in U.S. job creation in relation to other firm age categories. With the grouping of firm ages used to allow for the 1977 to 2011 average, the data suggests that net job creation doesn’t happen in any other firm age category, or at least that every other firm age category has registered net job destruction, or negative net job creation. Figure 11 contrasts this finding, displaying the 2011 net job creation in all firm age categories that were grouped into the “16+” category in Figure 10.

\footnote{Author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here: \url{http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls}}
Both figures highlight the tremendous share of net job creation held by startups, especially in comparison to net job destruction present in the “1”, “2”, “3”, “4”, “5”, “6 to 10”, and “11 to 15” years old firm age categories. But in the 2011 sample, the only one of the firm age categories bundled into the “16+” grouping to register net job destruction was the “16-20” category, which lost just over 87 thousand jobs. The other three, “21-25”, “26+”, and “LEFT CENSORED” cumulatively contributed 1 million jobs (78.3% from “LEFT CENSORED”), more than ten times the loss of jobs in the “16-20” category.\(^9\)

![Annual Net Jobs Created by Firm Age Category, 1992-2011 Average](image)

Source: Author's Calculations of U.S. Census Bureau, business Dynamics Statistics, Firm Age Tables

The issue of whether such a discrepancy is anomalous could be solved with better ability to average age categories independently, which would come only as a result of a measure in which the continued expansion and other transient effects of the older age categories could be reduced in their significance. Such a measure can be found in the derived statistics of net job

\(^9\) Author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here: [http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls](http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls)
creation per firm, as it is independent upon number of firms (although may still be biased due to the large amount of time those firms “LEFT CENSORED” have had to develop and expand.)

It is also likely that such job loss in all years, after the first, could be explained by the growth patterns of firms, particularly poor firm survivability. These issues are addressed in the “Firm Growth and Survival, After the First Year” section of this discussion.

Figure 13
Source: U.S. Census Bureau, Business Dynamics Statistics, Firm Age Tables

Given the ability to take comparative measurements without worrying about the time it takes for a firm age category to expand into its steady state, averages were taken over a number of samples, each starting from the first year a particular firm age category registered its first firms, and each sample terminating in the year 2011 to make sure the trends captured applied to the current U.S. economy. The results, shown in Table 2, establish the U.S. economy to be one in which, on average, all net job creation is shouldered by the startup firm age category, where all other firm age aggregates, on average, destroy jobs.
This claim applies only to the aggregate of firms that composes such a category, and not to individual firms. Certainly a number of individual firms in all categories are creating more jobs than they destroy. But as an aggregate, such is not true except in the case of startups.

<table>
<thead>
<tr>
<th>Sample</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<td>1978-2011</td>
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<tr>
<td>1979-2011</td>
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<td>-0.581</td>
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<td>1980-2011</td>
<td>6.05</td>
<td>-0.176</td>
<td>-0.594</td>
<td>-0.501</td>
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<td></td>
</tr>
<tr>
<td>1981-2011</td>
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<td>-0.165</td>
<td>-0.583</td>
<td>-0.499</td>
<td>-0.480</td>
<td></td>
</tr>
<tr>
<td>1982-2011</td>
<td>6.06</td>
<td>-0.156</td>
<td>-0.577</td>
<td>-0.486</td>
<td>-0.455</td>
<td>-0.406</td>
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<tr>
<td>1983-2011</td>
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<td>-0.153</td>
<td>-0.578</td>
<td>-0.482</td>
<td>-0.458</td>
<td>-0.412</td>
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<tr>
<td>1988-2011</td>
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<td>-0.489</td>
<td>-0.474</td>
<td>-0.422</td>
</tr>
<tr>
<td>1993-2011</td>
<td>6.08</td>
<td>-0.265</td>
<td>-0.540</td>
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<td>-0.417</td>
</tr>
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<td>1998-2011</td>
<td>6.20</td>
<td>-0.398</td>
<td>-0.531</td>
<td>-0.505</td>
<td>-0.445</td>
<td>-0.472</td>
</tr>
<tr>
<td>2003-2011</td>
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<td>-0.672</td>
<td>-0.583</td>
<td>-0.535</td>
<td>-0.455</td>
<td>-0.477</td>
</tr>
</tbody>
</table>

**Figure 14**
Source: Author’s Calculations of U.S. Census Bureau, Business Dynamics Statistics, Firm Age Tables
Recent Trends in the Establishment of Startups and Their Net Job Creation

Job creation in startups averages at 2.99 million jobs created annually. The Firm Age Tables show a steady incline in the first half of the last decade, peaking at 3.55 million jobs created in 2006, 18.8% above our now 35-year average. The following year, the recession struck, and the number of jobs provided to the U.S. economy by new firms declined. In 2009, only 2.41 million jobs were supplied, marking a loss of 32%, or over one million jobs provided to the economy. While in recent years this important source of job creation has started to strengthen once more, it is returning slowly, and as of 2011, startups were still 455 thousand jobs short of creating the 3 million they surpassed in 2007, and in nine of the ten years prior. It remains 19.6% lower than its 2006 peak.\textsuperscript{10}

\textsuperscript{10} Author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here: \url{http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls}
What is to blame for this drop in potency from a tremendous source of job creation? Is the decline in the hiring potential of startups? Or is it, instead, a decline in the number of new firms being created?

Net job creation per startup, similarly to net job creation in all startups, peaked modestly in 2006, in the last full year of expansion before the recession. Unlike the absolute net job creation measure, its decline ended much faster, bottoming out in 2007 instead. The decline was also less drastic; starting at an average of 6.32 jobs created per startup, it only fell 8.4%, to 5.8 jobs created per startup. This measure has been almost fully recovered, and in 2011 6.21 new jobs were created per startup. A meager 1.7% increase is required to achieve the level of this measure’s 2006 peak. The 19.6% required for the aggregate net job creation of all startups to reach the same peak, as well as other discrepancies in the decline and recovery of these two
measures suggest that the net average of jobs created per startup is not the cause of the decline in the net job creation of startups in the U.S.\textsuperscript{11}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{annual_net_job_creation.png}
\caption{Annual Net Job Creation per Startup, 1977-2011}
\end{figure}

Number of startups established each year exhibited its pre-recession peak in the same year as the prior two measure, with 532 thousand new firms being founded in 2006. Afterwards, it fell for four subsequent years, reaching the bottom of this valley in 2010, when only 389.7 thousand firms were founded. Not much information is available on any recovery or double-dip after this point, as only one year of data is available after the end of this four year, 30% plummet. Almost 20 thousand more firms were established in 2011, which could indicate the beginning of a recovery period. But the increase was modest, and as of the most recent data

\textsuperscript{11} Author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here: \url{http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls}
available through the BDS, firm foundation levels are still only 72% of what they were before the recession.12

![Annual Startup Birth, 1977-2011](chart)

**Figure 17**

*Source: U.S. Census Bureau, Business Dynamics Statistics, Firm Age Tables*

The share of net job creation attributed to startups certainly makes it an inviting subject of any discussion regarding producing a better employment environment in the United States, and a qualified target of any initiatives seeking to do so. One would first seek to restore startup job creation levels to pre-recession levels. The coincident 19.6% drop in aggregate startup job creation and 30% drop in firm creation levels suggest that the nature of such a decline in net job creation is the slowing of entrepreneurial activity in the United States. Conversely, the modest 8.4% drop, and subsequent recovery to just 1.7% below pre-recession levels in average job creation per new firm states fairly succinctly that startup hiring practice and potential is not the factor responsible for the delayed recovery. While encouraging the more extensive hiring in

12 Author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here: [http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls](http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls)
startups is, in the long run, a useful topic of discussion in expanding the U.S. job market, the more immediate are for improvement is encouraging the birth of more startups.\footnote{Author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here: http://www2.census.gov/ces/bds/firm/bds_f_sz_release.xls}

**Firm Growth and Survival, After the First Year**

While the constant creation of new firms supplies the innovation the U.S. economy requires in order to remain competitive, the aggregate body of such firms functions primarily as a sort of life support system. While startups provide short term sustenance for the economy they, by definition, can only remain startups in the scope of this discussion for one year. Thus it is necessary to examine growth and attrition in the body of young firms and the dynamics of growth in the maturing aggregate to determine how net job creation progresses in the following years, and if it can be made more effective. To limit the scope of such an inquiry, “young firms” will be defined as those firms in the “1”, “2”, “3”, “4”, and “5” firm age categories of the BDS.

**Attrition in Young Firms**

The net job creation figures examined thus far are attributes of the difference between expansion and contraction in all establishments (physical locations operated by firms) between years $t - 1$ and $t$. It is dependent not upon successful firms, or firms that desire growth in a manner that would make them successful job creators, but upon all firms, whether they are flourishing, static, contracting, or failing. While the Firm Age Tables provide limited if any means to isolate expanding, contracting, and static firms and establishments, they do provide the means to determine how many firms survive, and how many perish. This information is useful in at least understanding the success achieved by a year’s stock of startups, and is necessary to any discussion of how to maintain or continue the net job creation started by a given year’s aggregate of startups.
The good news is that the risk of a firm’s removal from the aggregate decreases steadily in each subsequent year for which it has been in existence, at least for the first five years of its life. Averaging the frequencies, from 1989 to 2010, of firms four years or younger that appear in the next firm age category in the subsequent year has yielded the average percent chance that a firm will survive each year in its early life. By definition, attrition in the first year of a firm’s life cannot be very accurately calculated from the BDS, as if a firm both is born and dies before the first data collection date, it will not appear in the BDS. Thus one would expect the calculated chance of death to be lower than that which an actual startup must face. In spite of this, even the calculated risk shows that the first year is by far the most difficult for a young firm to survive. An average of 76.8% of firms will survive their first year. If a firm can avoid being that nearly one in four of firms that fail close to immediately, then their chances of survival increase with time.\textsuperscript{14}

- 84.9% of firms survive their second year.
- 87.5% of firms survive their third year.
- 89.0% of firms survive their fourth year.
- 90.2% of firms survive their fifth year.

Now what does this mean for a new batch of startups? Each of the above rates is calculated using the year of risked death as a base year, but for current entrepreneurs looking to understand their chances of surviving to a given year from where they currently are, a base year of zero may be preferable.\textsuperscript{15}

- 76.8% of startups survive to age one.
- 64.9% of startups survive to age two.

\textsuperscript{14}Author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here: \url{http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls}

\textsuperscript{15}Author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here: \url{http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls}
- 56.8% of startups survive to age three.
- 50.6% of startups survive to age four.
- 45.7% of startups survive to age five.

It is important to recognize that not all of the firms that are listed as “not surviving” are entirely removed as sources of employment. Firm deaths do account for some of the attrition presented here, and firms that undergo such a process take their share of employment with them to the grave. Yet a greater number of firms fail to appear in the next year’s data than are accounted for entirely by firm deaths. The difference is likely composed of mergers and acquisitions. Some of these processes do not remove a firm’s share of employment from of the economy, yet just restructure it and add the share to that of the entity doing the purchasing. As there is no way to isolate these from similar actions intended to scrap another firm for parts or
eliminate competition, a firm’s survival as an independent entity is the focus of this portion of the discussion.

**Employment Growth in the Average Existing Firm**

But what becomes of the firms that survive as independent entities? Do these surviving firms mature in a way that produces jobs? The aggregate of all surviving and failing firms, on average, destroys American jobs in all age categories except for startups. But does the average American firm grow after its first year? Or is enough of the aggregate of surviving firms either content with its current size to cease its job creation, or even worse, could the pool of firms exiting the economy account for only a fraction of the net job destruction that is produced in older firm age categories?

The employment per firm metric indicates that older firms do, on average, have more employees, as indicated by every average shown in Table 3, as well as Figures 19. By selecting one of the averages whose samples are detailed in Table 3, a portrait can be constructed of the pattern of growth for the average surviving firm

<table>
<thead>
<tr>
<th>Sample</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
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<td>6.09</td>
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<td></td>
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</tr>
<tr>
<td>1978-2011</td>
<td>6.07</td>
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<td>1979-2011</td>
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<td>7.83</td>
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<td>1981-2011</td>
<td>6.12</td>
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<td>1982-2011</td>
<td>6.11</td>
<td>7.90</td>
<td>8.52</td>
<td>9.17</td>
<td>-0.455</td>
<td>10.53</td>
</tr>
<tr>
<td>1983-2011</td>
<td>6.09</td>
<td>7.88</td>
<td>8.55</td>
<td>9.20</td>
<td>-0.458</td>
<td>10.44</td>
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<tr>
<td>1988-2011</td>
<td>6.11</td>
<td>7.81</td>
<td>8.47</td>
<td>9.13</td>
<td>-0.474</td>
<td>10.45</td>
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<tr>
<td>1993-2011</td>
<td>6.12</td>
<td>7.68</td>
<td>8.34</td>
<td>8.92</td>
<td>-0.432</td>
<td>10.20</td>
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<td>1998-2011</td>
<td>6.23</td>
<td>7.70</td>
<td>8.38</td>
<td>8.97</td>
<td>-0.445</td>
<td>10.22</td>
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<tr>
<td>2003-2011</td>
<td>6.08</td>
<td>7.42</td>
<td>8.02</td>
<td>8.67</td>
<td>-0.455</td>
<td>10.25</td>
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</table>
Consider a theoretical surviving firm, behaving typically according to this metric in a universe where the 2003-2011 averages for each firm age category remain constant with time. Such a firm would start with just over six employees. Such a firm experiences its greatest growth between the first and second time it appears in the BDS (after it appears in “0”, but before it appears in “1”), amounting to about 21.9% growth. This growth slows almost immediately to around 8 to 9% in subsequent years. It becomes more difficult to track this growth from the BDS after the firms fifth full year (after it appears in the firm age category “5”) due to all categories thereafter contain firms born over a span of five separate years. The employment and quantity of firms given any particular year are difficult if possible to separate from the combined figure provided in the BDS, and divisions according to number of years included in the category would likely prove inaccurate, as it is improbable that the growth percentages would correspond to the older firms in such a category. All that can be provided is the percentage growth from the startups to the average size in each category spanning firms founded in multiple years.\textsuperscript{16}

\begin{itemize}
\item Firms 6-10 years old had 90.3\% more employees than startups.
\item Firms 11-15 years old had 127\% more employees than startups.
\item Firms 16-20 years old had 207\% more employees than startups.
\end{itemize}

\textsuperscript{16} Author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here: http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls
- Firms 21-25 years old had 306% more employees than startups.
- Firms 26+ years old had 548% more employees than startups.

Figure 19
Source: Author’s Calculations of U.S. Census Bureau, Business Dynamics Statistics, Firm Age Tables

These growth rates are, respectively, 13.0%, 19.2%, 35.4%, 32.1%, and 59.8% when measured using the previous age category as a base for the percentage, in case the listed percentages seemed too impressive. These are even less impressive once reminded once more that these are for groupings of firms born across periods of five years, or ten years in the case of the “26+” category.¹⁷

Once more, the continued aging of the firms in the “LEFT CENSORED” category has enabled these firms to exhibit a great deal of expansion, without the entry of younger, smaller firms. Those firms created just recently before the 1976 cutoff have had time to mature greatly,

¹⁷ Author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here: http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls
to say nothing of the older firms in this category, with birthdates that cannot be determined from this data. Such firms have grown from an average of 19 employees per firm in 1977 to an average of 120 employees in 2011, yet this is likely due in part to the definitional inability for newer, smaller firms to qualify, and is of little use to the discussion of the continuation of net job creation in younger firms.\textsuperscript{18}

\textit{The Effects of Firm Death on Net job Creation in Young Firms}

The measure of net job creation, displayed above and compared across firm age categories, is recorded for all establishments existing in year $t - 1$ that would have ended the year in the corresponding firm age category in year $t$, regardless of whether or not they appear in the census data in year $t$. This means that employment gains and losses are recorded for all firms and establishments that survive, are party to a merger or acquisition, or die. Some of the net job destruction mentioned in the Startups section above could therefore be due to firms going out of business. These firms, victims of the large amount of attrition to which young firms are subject, contribute nothing to the discussion of how successful young firms grow. To examine the growth in net job creation provided by those firms that survive, the effects of firm death must be removed from the figures used to measure net job growth as firms age.

\textit{Job Destruction in Firm Death}

The employment lost to firm death each year is recorded in the “Firmdeath\_Emp” indicator in the Firm Age Tables, and the 1992 to 2011 average is displayed in Figure 20. The loss of employment due to firm death is, as expected and mandated by definition, zero. From age categories “1” to “5”, employment loss due to firm death decreases steadily, only to break that pattern and spike in the “6-10” age category, and continue its descent in the “11-15” age category, with the “16+” age category holding the highest levels of all.

\textsuperscript{18} Author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here: \url{http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls}
The break in the decline after the “5” year old aggregate is to be expected, and is likely the result of a sampling bias regarding the different age spans covered by each category. The “0” to “5” age categories, each covering firms born within one year of each other display one pattern of decline in employment loss, while the “6-10” and “11-15” firm age categories do continue it, but due to the wider timespan over which their member firms were born, their levels appear inflated compared to those age categories spanning a single year. The “16+” grouping of firm age categories, however, contains firms born over an indefinite sample of time, and as such is inflated to an even greater degree by this sampling bias.

To correct this, averages should be taken in a similar fashion to those found in Table 2, detailing the number of employment lost per firm that died (a listed as the indicator “Firmdeath_Firms” in the BDS, uses the end year as its base year, like “Firmdeath_Emp”). The results are somewhat surprising, as these averages appear somewhat static across firm age
categories. According to the 2003-2011 averages, which allow for all age categories to exist in the sample, a firm that perishes in its first year of existence takes with it, on average, 5.38 positions for employment. This number grows with firm age, but does so slowly. Firms that die in their second year eliminate only 13.0% more jobs than those that die in their first. Firms that die in their second, third, fourth, and fifth years, eliminate 13.0%, 15.9%, 17.3%, and 25.8% more employment positions, respectively, than a firm that dies in its first year. The five year age samples, “6-10”, “11-15”, “16-20”, and “21-25” eliminate 33.1%, 39.0%, 43.0%, and 55.1% more employment upon death than first year deaths. To put these percentages in perspective, the most destructive deaths of any firm age category, those in the “26+” category destroy an average of 57.6% more jobs than first year death, which only amounts to an average of fewer than eight jobs per firm death in this category. The only category that breaks this pattern is the “LEFT CENSORED” category. As the “LEFT CENSORED” category may never contain more firms than it did the previous year, smaller firms cannot age into it and perish. Thus, as time marches on, metrics for this category become biased due to the ancient behemoths which it contains.  

19 Author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here: http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls For details on the statistic and calculation of this figure, see Appendix C, Figure 18.
The finding of relatively static employment destruction due to firm death runs contrary to what might be expected. Older firms are, on average, have a larger labor pool than younger firms, and thus should have more jobs to lose in the event of their death. Yet firms rarely die while functioning at peak levels, or even at any time in which their employment levels and existence remain sustainable. Instead one may imagine an average firm’s simplified life cycle manifesting roughly as “a bell-shaped curve with rapid net employment growth during the first phase, followed by stability and then a slow decline” (Kane, 2010). The data supports this, and indicates that the aggregate of firms represented in a single year’s firm deaths in an older firm age category have been declining in years prior, and have shed most of their employment before the year in question. This same finding also contrasts, but does not contradict, the trend in which job destruction due to firm death declines with firm age, as the number of firm deaths declines similarly.
Remaining Net Job Creation

It was noted earlier in this discussion that with the firm age aggregate net job creation numbers, every firm age category, with the exception of startups, appeared to destroy jobs. This implied that only startups could create jobs, as the rest of the economy worked tirelessly to destroy them. This finding, while useful when observing the effects a body of firms the same age would exert on the economy over the next year, is not useful to the understanding of when existing firms present the strongest engine of net job creation.

The net job destruction observed in firms age one and older does appear to be a direct result of firm death. Once each firm age category’s firm death figures were added to the corresponding figure for net job creation, the effect was quite different from that observed in net job creation alone. While the surviving firms in every non-startup age category did register at least one year of negative net job creation, when averaged from 1992 to 2011, positive results for job creation were achieved for all age segments. No span of ages listed in Figures 12 and 13 were periods in which employment shrank as a whole.

Omitting employment loss due to firm deaths, while shifting all age segments into the territory of positive net job creation, did not significantly change the makeup of what segments create the most jobs. Firms 0 to 5 years old accounted for an average of 3.7 million jobs per year or 90% of the contribution of all surviving firms. The largest contributor of all age segments is still, unsurprisingly, startups, responsible for 72.7% of America’s net job creation. The definitional impossibility for this firm age category to display either firm death or job destruction in the BDS means that startups’ average annual contribution remains relatively unchanged from previous figures, at 2.99 million jobs. The runner up, with a contribution over 10% the size of startups’ but almost 8% of all net job creation, is surviving one year old firms. This
demonstrates that the growth is continued, though diminished, in surviving firms for a brief period after they've shed their status as a startup.\textsuperscript{20}

\begin{center}
\textbf{Annual Net Jobs Created in Surviving Firms by Firm Age Category, 1992-2011 Average}
\end{center}

![Annual Net Jobs Created in Surviving Firms by Firm Age Category, 1992-2011 Average](image)

\textit{Figure 21}
Source: Author's Calculations of U.S. Census Bureau, Business Dynamics Statistics, Firm Age Tables

This diminishes quickly, as three year old firms provide only the fifth greatest share of net job creation, behind the “6-10” firm age category, and falling just short of firms older than sixteen years. These segments, however, enjoy their own definitional advantages, as firms in the “6-10” category spans a sample of firms births five times as large as any of the younger categories, to say nothing of the “16+” category, which contains firms borne over an indefinite period of time. The oldest segment is responsible for shockingly little job creation, considering that it is composed of four separate firm age categories found in the BDS. Yet this result just reinforces the appearance that America’s primary source of net job creation is startups, followed by young firms.

\textsuperscript{20} Author’s calculation using data from the July 2013 release of the Business Dynamics Statistics’ Firm Age Tables, Published by the U.S. Census Bureau, accessible here: [http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls](http://www2.census.gov/ces/bds/firm/bds_f_age_release.xls) For details on the statistic and calculation of this figure, see Appendix C, Figure 19.
Recommendations

The defining factor affecting the likelihood of an ambitious entrepreneur's success in creating, maintaining, and expanding a new startups is access to resources. Such critical resources may come in the form of financial capital, outside resources (such as support from “incubator” firms and business counselors), and the subject of this discussion: human capital (Gilbert, McDougall, & Audretsch, New Venture Growth: A Review and Extension, 2006). Firms fail when these resources are exhausted and no longer available, and are integral to determining how fast a firm can grow successfully. Thus, any discussion of how to encourage the creation and expansion of new firms must center on how resources may be made more available to nascent entrepreneurs and new firms considering and in the midst of an expansion process.

If firm creation, survival, and expansion are dependent upon the accessibility of resources, then the role of government greatly depends on the region administered by the government body in question. The necessary resources are not evenly distributed across the United States. Regions with lesser accessibility to resources, such as inner cities and rural regions than in centers of industry like Silicon Valley (Gilbert, McDougall, & Audretsch, New Venture Growth: A Review and Extension, 2006). Certain policy that may work for some regions may not work for others, and government bodies administering larger regions may have too little attention to devote to devising unique strategies for each region and sub-region in an entanglement of diverse local economies. Therefore this task requires cooperation between government bodies at various levels, as well as the private sector, to accomplish the task of stimulating employment growth in new firms.

The Role of Federal and State Governments

The role of higher levels of government, such as the federal government, should be to create structural change to make resources cheaper and easier to distribute. One of the
The greatest incentivizing tools at the government’s disposal is the tax code. Tax deductions and credits can be awarded to certain behaviors that are to be encouraged, or used to mitigate the costs and risks that might deter some from engaging in desired behaviors. In the case of making financial capital more accessible to new firms, provisions should be included in the tax code to encourage certain investments in startups and expanding firms, as well as decrease the costs required for those young firms that suffer from fragile beginnings to expand their employment base to the levels they require.

**Encouraging Investment in Startups**

While the task of starting a new firm may often be possible with the financial resources available to an individual or team of entrepreneurs, firms that remain dependent upon such personal resources are of little use to the nation’s employment growth. A firm’s growth usually requires a greater degree of capital than that which is available through self and personal connections, and growth-oriented firms must often seek help from government or private sector sources of investment (Gilbert, McDougall, & Audretsch, New Venture Growth: A Review and Extension, 2006). Thus it is of little surprise that a survey of startup executives in high-tech fields found that most startup executives believed that the editions to the federal tax code that could greatest ensure their immediate success were those “promoting capital formation - specifically, providing a tax incentive to invest in startups” (Silicon Valley Bank, 2013).

**Current Initiatives**

President Barack Obama’s administration is already exploring the idea of incentivizing venture capitalists to aid in the growth of young firms. The factsheet for a White House initiative promoting support for startup growth promised that his “Administration Will Propose Permanent Elimination of the Capital Gains Tax on Certain Small Business Stock” (Fact Sheet: White House Launches "Startup America" Intiative, 2011) and that the Treasury Department would
“Simplify Rules for $5 Billion in Tax Credits for Private Investment in Lower-Income Communities” (Fact Sheet: White House Launches "Startup America" Initiative, 2011).

**Strengthening Incentives for Investors**

These measures can be taken further in a practical manner, particularly the elimination of the capital gains tax. This tax is usually less severe than others for those who have sufficient capital for numerous or larger scale investments. The tax on ordinary income usually is a greater detriment to the funds of wealthier venture capitalists “throughout almost the entire history of the United States... Today, the top rate is 15 percent for capital gains and 35 percent for ordinary income” (Mankiw, 2012) The creation of a tax credit to make investment in a startup safer, specifically by mitigating losses in those same targeted startups may prove as a more effective incentive. Summarized, a share of funds lost in a failed investment in a startup could be taken as a tax credit against the investor’s ordinary income. As the risk associated with such an investment is diminished, investors will feel more secure in making a greater volume of investments.

**Encouraging Venture Capital Syndication**

Studies of German IPOs suggest that a particular investment practice encourages greater growth, both financially and in employment. Venture capital syndication in which multiple firms purchase equity in a subject firm, appears to influence the rate at which such a firm can grow (Lehmann, 2006). While the direct financial benefit to the subject firm may not always be obvious, this conclusion does follow the observation that firms that experience successful growth tend to be those with ties to a larger organization (Gilbert, McDougall, & Audretsch, New Venture Growth: A Review and Extension, 2006). Syndication provides ties to multiple such firms, with a vested financial interest in the success of the subject. Thus the subject has greater access to valuable experience and vital resources than its similarly sized competitors.
The incentives to syndicate leave something to be desired. One such incentive is mitigation of associated risk, as the efficiency, and therefore the investment risk, associated with a subject firm only becomes truly apparent after capital has been invested in the creation of a startup (Lehmann, 2006). No particular benefit in stock price is associated with these investments, compared to those that are not syndicated (Lehmann, 2006). The risk, and thus the profit, are shared among the invested firms, and may seem underwhelming depending upon the scale of the investment and the funds available to the venture capitalist.

**Subsidizing Employment for Firms Working Towards Viability**

The same survey citing the capital formation incentives as the preferred edition to the tax code by startup executives, promotion of capital efficiency was the second most requested (Silicon Valley Bank, 2013). This area of tax improvements is targeted at alleviating operations costs for firms, allowing for growth. While government funds are too limited to cover operations funds for every firm considering an expansionary period, the nation’s employment may benefit from specific subsidies for firms in a very specific stage of their birth.

Many firms that would be beneficial to the economic state of the nation, and have potential to become successful employers do not see a profit for the beginning of their existence. These costs of these firms might be alleviated through targeted tax credits. These tax credits might particularly alleviate employment costs for firms still in which they operate at a loss, to benefit these firms as well as provide short term subsidies that directly impact the employment situation.

**The Role of Regional and Local Governments**

Startups are subject to a “liability of smallness”, where “in the absence of growth, both new and small firms are confronted by a lower likelihood of survival” (Gilbert, McDougall, & Audretsch, New Venture Growth: A Review and Extension, 2006). Their placement within an economy can be determinant in their success, both financially and as an employer. Local
government officials are assigned an important role in the economic development of their local economies. It falls to them to organize the business community to shape the economy in ways favorable to new startups, and attract startups that would be valuable to the regional economy, through social networking and educational events.

**Important Attributes of Regional Economies**

The most important step a local government can take towards encouraging startup creation is to educate themselves about the idiosyncrasies present within their own local and regional economies. This involves achieving an understanding of those already developed firms and industries within the region. Entrepreneurs will be more likely to locate to, and their projects will be more likely to survive in areas of the economy where growth is not threatened by entrenched competition, but rather supported by complementary firms and industries.

**Local Market Volume**

Officials in local government must have an understanding of what supplies and demands exist in the local market. They should work to remain informed about which communities and demands are saturated, and which are underserved. New firms can be versatile means to create employment to address demands that are not being met. These unmet demands could be based off regional need for a product or service, or more geographically defined, such as inner city neighborhoods which have greater unmet demand for retail, financial, and other services (Porter, 1997). Firms starting in markets where demand is already met face a likely difficult battle against established institutions for market share, meaning less capital will remain for growth. A firm’s likelihood of survival becomes affected when more than 65 competing firms operate within the same location (Gilbert, McDougall, & Audretsch, New Venture Growth: A Review and Extension, 2006). And even if the new firm was successful, without growth being affected, such success would likely come from competing away a portion of market share held by other firms, forcing them to adjust their own employment accordingly.
Cluster-Based Development

An understanding of the existing firms and patterns for interaction present in a regional economy is another key element in identifying areas of a local economy where new firms would thrive and contribute to the regional economy. Ideally, one would be able to identify potential amid “regional clusters.” These clusters are frameworks of companies in related fields and may take the form of “not only firms and suppliers but also educational institutions, specialized finance providers, and specialized research centers” (Porter, 1997). There is potential for such firms to interact in a synergistic fashion, benefiting from the presence of other firms within the cluster. If a role in the cluster is properly identified, new firms could be sustained by the cluster, either passively or actively, through stages of the firms expansion or other times when such a firm would otherwise be at risk.

Organizing Community Support for Startups

Few are better positioned to understand these trends than those involved in running the firms that are subject to them. CEOs and other firm officials compete in the markets and must maintain an understanding of their state and direction if they are to remain in business. The same applies to regional clusters. None would better understand where there is potential for further development to a cluster than those involved in the operation of a member firm to that cluster. These member firms have greater understanding of what inputs they require (including specialized labor inputs, material inputs, or finance inputs), what firms purchase their outputs, and where there is potential for new firms on either end of the production process.

It thus behooves local politicians to organize the structures that make such private sector expertise accessible to policy makers, nascent entrepreneurs, and all other relevant parties, as well as do their best to utilize the information yielded. Community based organizations are key to such strategies of a city or county’s entrepreneurial development. Important and informed CEOs or other business leaders in a region, if willing to build such relationships, should be
encouraged to regularly converse with the policy makers to whom such development is
delegated to keep the perspective of local government current. Regular meetings should be
scheduled with organized committees of such leaders, and those same committees should be
given scheduled forums with the public to discuss the area’s firm environment. The local
government must also prioritize social networking for those involved in these strategies for
startup development in the region, ensuring that nascent entrepreneurs can be connected to the
area’s business leaders to develop collect information and develop professional relationships
that could be helpful in founding and expanding a firm. Lastly, local governments should, once
armed with the relevant information regarding potential development opportunities for their
region’s cluster economies, search at home or abroad for those individuals or teams that have
experience in creating firms of the desired nature, in the desired industry.
Conclusions

The vast majority of net job creation in the American economy is produced in young firms, specifically those in their first year of operation. Such firms are fragile, as a firm’s risk of death is highest in its early life and decreases as firm age increases.

This is the case for firms as an aggregate, but not necessarily for individual firms. The early life fragility of firms is largely due to the small size typical of young firms. Firms that lose their size are once more at risk. This is due to a “liability of smallness” (Gilbert, McDougall, & Audretsch, New Venture Growth: A Review and Extension, 2006), and the decline in accessible resources that accompany it.

Due to the high attrition rates in a firm’s early years, much employment is lost in firm deaths following firm births. This employment loss typically outweighs whatever net job creation is contributed by surviving firms founded the same year.

To refit the American employment system, one of the many approaches that must be considered is job creation through startups and young firms. Of numerous objectives such an initiative must accomplish to be successful, two of the most important are encouraging the creation of new firms in appropriate economic settings, and aiding a greater share of those firms in their survival.

Encouraging startup creation is important in bringing new innovation to the American economy. Greater innovation and diversity in products creates greater room in the economy for employment, as it somewhat separates the market shares for which firms are competing. An important aspect of encouraging such entrepreneurial activity is by making investment and other capital accessible to entrepreneurs and their new firms. Much of this is done by incentivizing venture capital firms to invest in startups.

An important piece of encouraging entrepreneurial is to create startups and attract entrepreneurs to economic areas where they are needed. New firms are not useful to the issue
of employment if their existence serves to claim market share from existing firms and costs them equivalent or greater employment capacity. Funds and efforts involved in encouraging the creation of startups are also wasted if the startup fails without positively affecting the economy, or maintaining employment levels for useful periods of time. As such firms should be encouraged to start in underdeveloped markets, or as member firms of a regional cluster that can support them.

By understanding the nature of firm creation and the jobs created in the process, and by taking action accordingly, the American economy stands the chance to remedy much of the deterioration in the job market. Such initiatives must span multiple levels of government. Solutions must involve both legislative measures, education of the parties involved, and social networking efforts. Yet if the job creation rates in the United States can be revitalized, net job creation in the United States will likely improve.
Bibliography


