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ENTREPRENEURS VERSUS ESTABLISHED COMPANIES: WHO ARE THE REAL JOB CREATORS?

John H. Friar[1] , Nizar Zaarour[2] , Basma Bargal[3]

[1]*Executive Professor, Entrepreneurship, D'Amore-McKim School of Business, Northeastern University*
[2]*Associate Teaching Professor, Supply Chain and Information Management, D'Amore-McKim School of Business, Northeastern University*
[3]*Healthcare Systems Engineering Institute, Northeastern University, Boston, USA*

Abstract

An important question in economic development is who is responsible for creating more jobs: startups or established companies. Several researchers have claimed that entrepreneurs are responsible for most job creation, while others have found that it is the established companies. This becomes important in deciding which policy approaches to pursue: recruiting large companies to relocate with different financial and economic inducements or by relying on entrepreneurship. In this paper we perform a statistical analysis of job creation by entrepreneurs versus established companies. We use a data set that covers a larger time period than other studies, includes all industries and non-employers, and follows individual companies. We find that over the whole time period that established companies generated the greater number of jobs. However, in shorter time periods the entrepreneurs did. This may help in explaining some of the prior contradictory findings. But from a policy perspective, the findings suggest that both approaches are necessary.

Keywords

Job Creation, Economic Development, Entrepreneurship

JOB CREATION: ANOTHER LOOK

In economic development there have been two traditional approaches: recruiting large companies to relocate with different financial and economic inducements or by relying on entrepreneurship (Toma et al., 2014). Although economic development is multifaceted, a main outcome for economic development is to generate more jobs (Friis et al., 2002). The question for economic development, therefore, becomes whether large companies or entrepreneurs generate more jobs. The research on the topic has been contradictory, mainly because of the various definitions of entrepreneurship and due to several methodological issues (Neumark et al., 2011). In this paper we analyze some of the prior issues and then perform a statistical analysis of job creation by entrepreneurs versus established companies. What we find is that in general, established companies generate more jobs but in some years entrepreneurs do. So, from a policy perspective, both approaches need to be maintained.

Prior Studies

Although researchers generally agree that entrepreneurship is important for job creation and growth, there is little agreement as to what that relationship is and how important it is relative to large firm growth. Some studies have argued that small firms generate the most jobs, but then others show just the opposite. Studies have shown that firm births are the main source of new jobs, especially in the first year, but then others argue that most of these companies go out of business so on net they do not create jobs. In this study, we take a fresh look at the issue by analyzing the job creation impact of new business creation over varying periods of time to account for survival rates of the startups.

Entrepreneurial firms have been found to create net new jobs, but entrepreneurial firms are defined as a combination of small businesses and startups (Henrikson and Johannsson, 2009). The research on the importance of entrepreneurial firms bifurcated into two streams: size of companies and age of companies. In the size of company

stream, Birch (1987) first claimed that small firms disproportionately create new jobs. A series of studies ensued to further test Birch's finding. In reviews of the literature, Davis et al. (1996) and Brown et al. (1990), found that conclusion to be misleading. They found that small firms led in gross job creation but not in net job creation, considering job destruction by small firms downsizing or exiting the industry. They found that establishments with more than 100 people were responsible for two-thirds of job creation. In an attempt to reconcile the divergent findings, Haltiwanger et al. (2013) discussed the methodological issues and then introduced a new variable, age of firm. They concluded that that once firm age is introduced, there is no evidence that small firms have higher net growth rates than large firms.

The studies on startups' impact on job creation are also contradictory. Kane (2010) found that 100% of net job creation came from companies in their first year. In each year thereafter, job destruction was greater than job creation. Haltiwanger et al. (2013) argued against this because startup firms are so volatile and have high exit rates that those jobs are transitory. Spletzer (2000) argued that 40% of startups shut down within the first three years of existence so no lasting jobs can be attributed to them. Dvorkin and Gascon (2017) found that startup firms account for only 2% of employment and that it takes 11 years for firms to become stable if they survive that long. Davis et al. (1996) also questioned the durability of jobs created in a startup's first year and found that 35% of jobs did not survive the year. Hendereson and Weiller (2010) argued that business creation is systematically tied to job growth but is greatest in the long run because it takes time for a startup to get to a growth phase.

Within startups, several people have argued that net job creation comes from a small percentage of startups (Acs, 2011). These fast growth startups are termed "gazelles". Storey and Strange (1992) found that 33% of jobs are created by just 2% of new firms. Henrikson and Johannsson (2010) in a meta-analysis of 20 studies on gazelles found that rapid growth firms do provide disproportionate job growth. They also found, however, that gazelles can be of any age and size and therefore are not necessarily startups.

Issues With Other Studies

Several authors have pointed out that a problem with many of the studies has to do with the data. Many studies only considered manufacturing firms and employment, leaving out much of the economy (Davis et al., 1996). Studies looked at establishment data but did not separate new establishments created by startups versus new establishments created by existing companies (Bednarzik, 2000). We found that of all new establishments in Massachusetts, 5.29% were new divisions or subsidiaries of existing companies, so the influence of startups would be overstated. Studies did not follow individual establishments over time so their categorization could change (Davis et al., 1996). For example, a fast growth startup could reach 100 employees quickly and be categorized as a medium firm rather than still as a startup. On the other hand, survival is not taken into account in that a startup could create many jobs, but then fail destroying all the jobs for a net no job creation.

Non-employers were often not taken into account. The data bases used only considered employer firms. However, non-employers are creating jobs for themselves and should be considered. Also, several studies looked at only short time periods, such as 5 years as Bednarzik (2000) or 10 years as Malchow-Moller et al. (2011) did rather than over a longer period of time.

This Study's Approach

Although entrepreneurship has several definitions, we define entrepreneurship as the creation of a new business, whether employer or non-employer. We separate out new establishments created by an existing company from new standalone startups, which would be our entrepreneurial firms.

Rather than analyze by size of firm to determine the argument between small firm/large firm effects, we analyzed by firm age to assess differences between startups and established firms. We varied the time frame for new from 3 to 7 years to account for survival and to provide time for a startup to reach its growth phase if it did.

The data used were YTS data from the University of Wisconsin and covered the years 1997 to 2019.[4] YTS data were used because they include non-employer data and all industry segments. Establishments are also tracked as to whether they are freestanding or a subsidiary of another company. The data focused on the Commonwealth of Massachusetts. We chose Massachusetts because it is known as an active entrepreneurial environment and because the job growth rate in Massachusetts has been greater than the US as a whole (Sullivan et al., 2022). We wanted to analyze entrepreneurship's impact in an active entrepreneurial environment with high job creation.

Data Cleaning and Missing Data

The original dataset comprised 84,227 rows and 310 columns, with each row representing one business. A description of the all the relevant information given in the original dataset is in Appendix A. Out of the 310 columns, 292 are dedicated to the yearly values of the data variable. This means that the dataset was in a cross-tabulated form that required transformation into a flat form to facilitate creating an analyzable data model. The

[4] DataAxle is the provider of the Licensed Database used to create the Your-economy Time Series (YTS). This work/research was authorized to use YTS through the Business Dynamics Research Consortium (BDRC) by the University of Wisconsin's Institute for Business and Entrepreneurship. The contents of this publication are solely the responsibility of the authors.

transformations required the creation of a data model, and the analytic measures were all done using Microsoft Power Tools for Data Analytics (MSPTDA); an integral part of Microsoft 365 that used to be separate add-ins for Microsoft Excel.

A time dimension table was added to the data model to facilitate time series analysis. After data cleansing, 687 rows (approximately 0.81% of the data) were removed for various reasons including incomplete data, data being outside geographic area of interest, or date established is erroneous (after data was collected).

WHAT WE FOUND

We first analyzed the impact of changing the definition of a startup company by number of years in business to account for survival. Authors have argued for differing numbers of years. Badal (2010) argued for 3 years, and Malchow-Moller et al. (2011) and Haltwanger (2009) suggested 5. So, we looked at three definitions: 3, 5 and 7 years. What we found was that there was little difference in varying the age of a startup. The difference in job creation was most for the older firms, but the difference resulting from using different thresholds did not change the relationships and contributed to an average difference of only 15%. So, survival did play a role in longer term job creation, but the difference between companies in their first 3 years versus their first 7 years was small. We present the data, however, with all three-time frames.

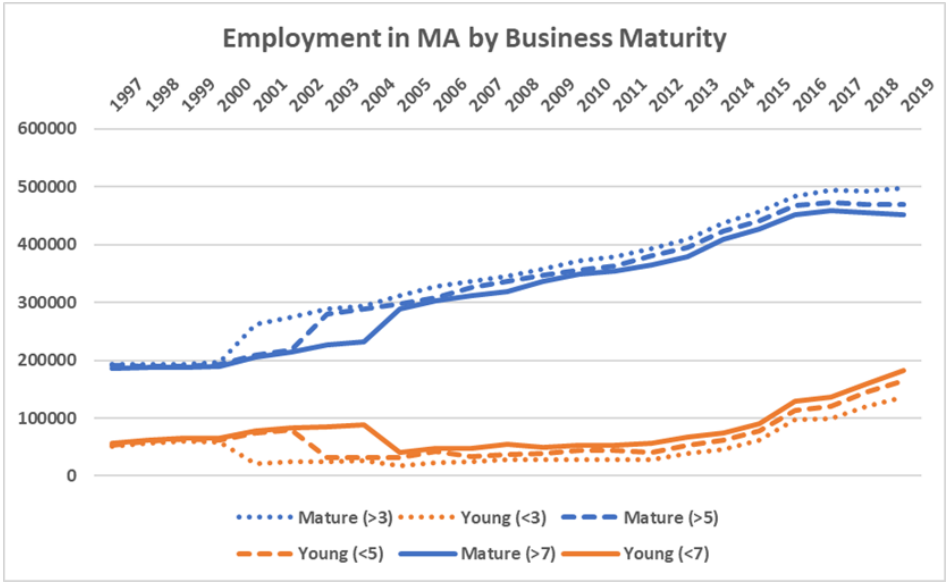

Figure 1: Employment in MA by Business Maturity showing no major difference in using different thresholds.

When we compared older companies to startups, what we found is that the relationship between established company job creation and young company job creation is dynamic – that it changes over time. On

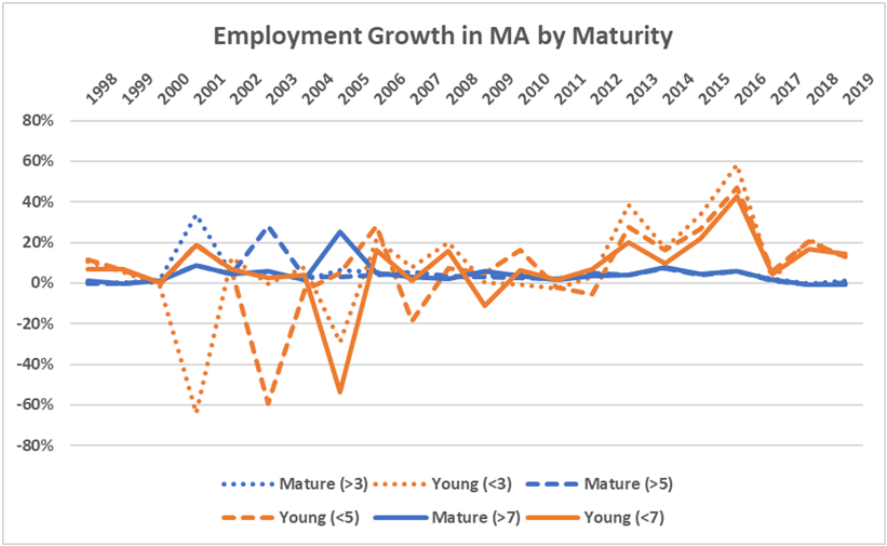

Figure 2: Employment growth in MA by maturity highlighting that young companies' employment growth is higher than mature companies the past couple of years.

average, older companies were the main generators of jobs while young companies had the faster rate of job creation off of a smaller base. Mature companies generated two-thirds of new jobs while startups generated one-third over the 23-year period.

However, when we analyzed job creation year by year rather than over the whole time period, we found that young companies crossed over and generated more jobs in the last couple of years of the study.

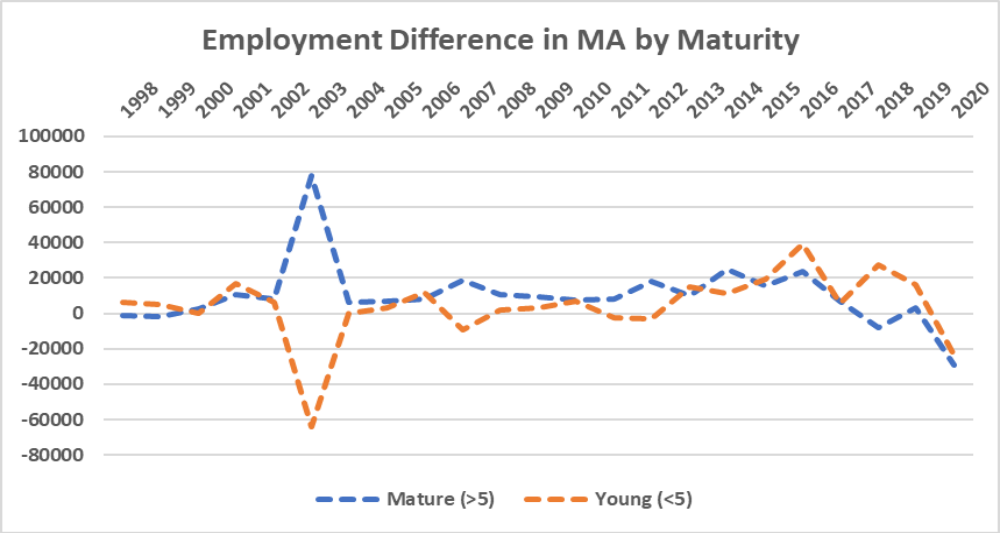

Figure 3: Employment Difference in Massachusetts using a maturity threshold of 5 years since there is no major difference between the thresholds tested

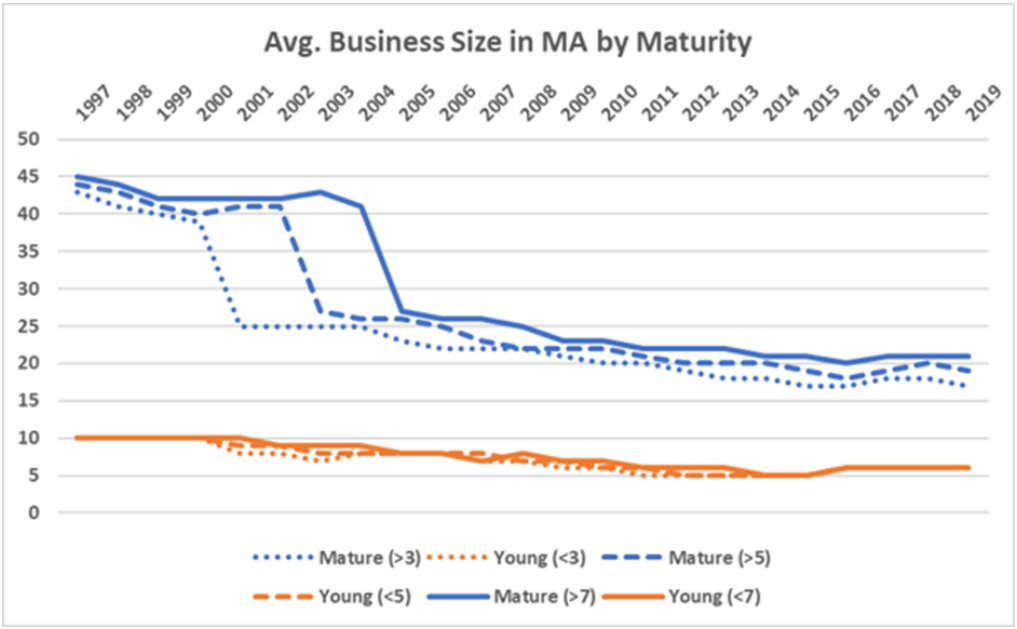

Figure 4: Average business size decreasing over time

So, in effect, young companies were the main generators of jobs in certain periods. A trend we noticed over the time period of the study is that the average size of established companies more than halved, accompanied by a large increase in the number of establishments. This seemed to coincide with the economic slowdown of 2000-2001. Likewise, the average size of young companies halved, but the growth in the number of startups surpassed the number of established companies. With the slowdown of the 2000s, there may have been a significant restructuring of the economy, which led to job creation by startups becoming more important.

When we analyzed gazelles, we found that they did not have a disproportionate impact and that they were not the main generators of jobs. As there is no uniform definition of gazelles, they are companies that grow very fast at any age, we used the following definitions.

- Startup: grows from startup to 100 employees in 4-5 years.
- Small: an established small company that then doubles in 4-5 years

- Medium and large: companies that had reached medium or large size that then continue to grow at 20% a year for 4 years

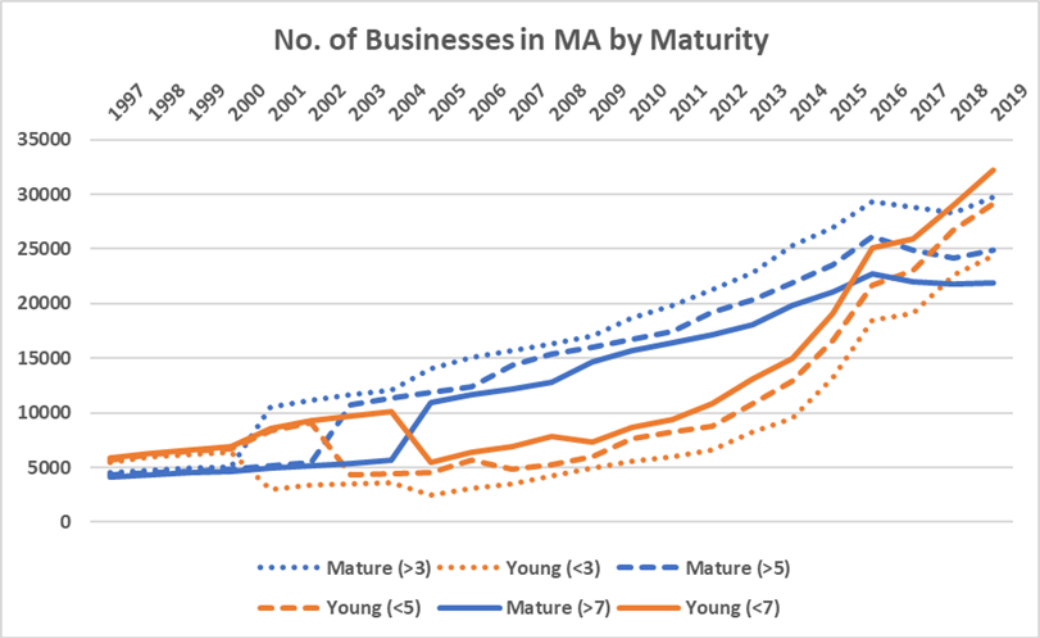

Figure 5: Number of businesses in MA by maturity

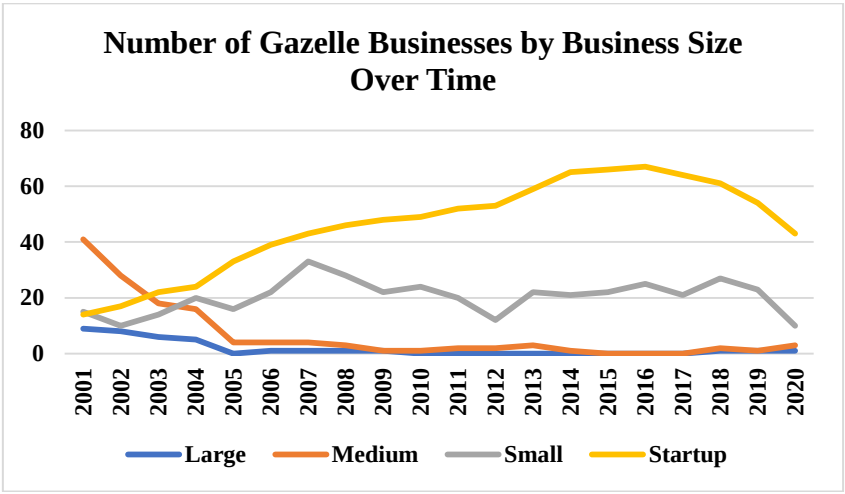

Figure 6: Number of Gazelles over time, the majority of gazelles have come to be from start ups

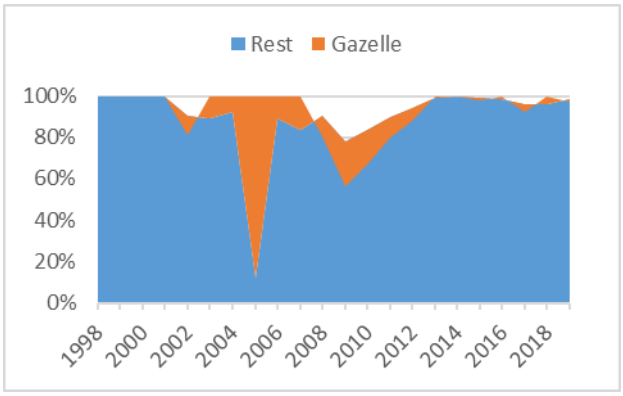

Figure 7: Employment growth for small businesses that were gazelles. The contribution of gazelles to job creation in small businesses is much less than the non-gazelles except for one year.

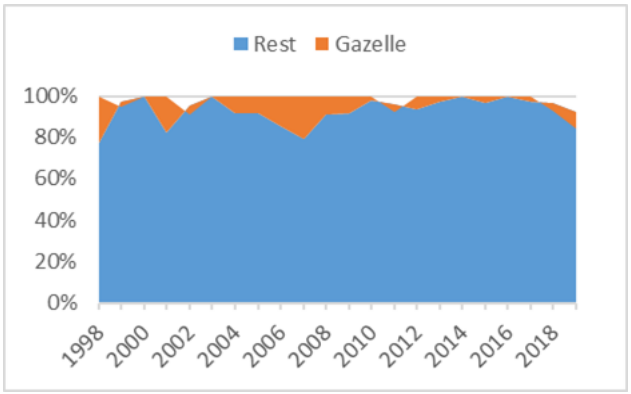

Figure 8: Employment growth for startups that were gazelles. The contribution of gazelles to job creation in startups is much less than the non-gazelles.

We found that the majority of gazelles were startups, but that this changed over time (Figure 6). We also found that in most cases, gazelles were not the main source of job creation, except for one year in small businesses (Figures 7 and 8).

IMPLICATIONS

By using a dataset that incorporates non-employers and all industries, and that separates out startups from new establishments of existing companies, we found that the role of startups versus established companies in creating jobs is dynamic. On average, established companies were the most important, with large companies adding the most jobs, which supports some of the initial research on the topic. But in following the changes over time, we found that startups became the most important followed by small companies, which supports the contrary prior research. In looking at gazelles, we found that in most years they did not have an out-sized impact, but in one year they led job growth for small businesses.

This research has shown that our understanding of the role of startups in job creation needs to become much more sophisticated, that the simple models we have to date are not enough. We would argue that any model would need to be contextual, that sometimes-established companies are more important and sometimes startups. This assumes that what we found over the 23-year time frame of the data is cyclical even though the trend was in one direction. The other hypothesis would be that there has been a structural change to the economy if the trend line continues.

We did analyze just one state, Massachusetts, so further studies of other states are necessary to see if the patterns in Massachusetts hold true. From a policy perspective, however, our findings suggest that it behooves states to have a dual perspective in economic development: that both startups and established companies are important to job creation.

Appendix A

Categories of Information in Data Set

1. Company
    a. Name
    b. Industry
2. Location
    a. City
    b. State
    c. Zip Code
3. Age
    a. First Year
    b. Last Year
    c. Year Established
4. Employment
    a. First Year
    b. …
    c. Last Year
5. Sales
    a. First Year
    b. …
    c. Last Year

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