



Employment Growth in Wisconsin: Is it Younger or Older Businesses, Smaller or Larger?

Tessa Conroy and Steven Deller

*Department of Agricultural and Applied Economics and
Center for Community and Economic Development
University of Wisconsin-Madison/Extension*

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Table of Contents

- Key Points*1
- Introduction*..... 2
- Nonemployer Businesses*3
- Employer Businesses* 8
 - A Better Understanding of Small Businesses* 8
 - Job Creation by Business Size*9
 - Small vs. Young Businesses*..... 11
 - Job Creation by Business Age* 11
- Net Job Creation* 15
- Discussion and Policy Implications*18
 - Nonemployer Businesses* 18
 - Linking Nonemployer Businesses and Small, Young Businesses*..... 19
- Conclusion*19
- References*..... 21
- Data Appendix* 21
 - Sources:*..... 21
 - Key Definitions:* 22
 - Methods:* 22

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Key Points

- Just 29% of non-farm businesses in Wisconsin have payroll employees. The remaining 71% are nonemployers, sole proprietorship or partnerships with no payroll employees.
- Since 2000, the number of nonemployer businesses has increased 25%. At the same time, the number of payroll employer businesses has decreased slightly.
- New business start-ups create the largest share of jobs compared with businesses of any other age group. In Wisconsin, over 25% of gross job creation comes from new business start-ups.
- Nationally, and in Wisconsin, the shares of job creation from small and new businesses has slowly decreased over the last two decades.
- In Wisconsin 62.3% of new start-ups survive to three years of operation and 51.6% survive to five years, which is slightly better than the U.S. average.
- These findings suggest that economic policies should give attention to new business start-ups and young firms in their first five years of operation.

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Introduction

The most recent recession, widely referred to as the “Great Recession”, had devastating consequences for the economy, perhaps felt most acutely by the many left unemployed in its wake. Nationally, over 8 million jobs were lost between December 2007 and January 2010. The slow economic recovery has highlighted the importance of employment growth and the need for a better understanding of job creation. Often the discussion of employment growth focuses on analysis by industry, comparing high-growth sectors to those that are stagnant or declining. Industrial trends can be informative but their relevance to the broader economy is limited. Regardless of industry, jobs are constantly being created and eliminated by businesses. The “churn” is a natural part of a healthy dynamic economy. Instead of focusing on specific industries, it may be more insightful to evaluate job growth by the age and size of firms: newer vs. older as well as smaller vs. larger businesses. Approaching job growth with a focus on age and size leads to useful insights for economic development strategies and policies.

Often, employment analysis focuses on payroll employment. Counting only payroll employment means that the roles of business owners, entrepreneurs, and sole proprietors are not fully included as jobs. Yet the self-employed are becoming an increasingly important as a growing

number of people elect to work for themselves rather than in traditional wage-and-salary or payroll positions. In fact, nonemployer businesses, sole proprietorships or partnerships that have no payroll employees, make up the large majority of businesses and continue to grow in number and share.

In addition to tracking nonemployer businesses we also analyze the more obviously important employer businesses. Though employer businesses are perhaps more visible than nonemployer businesses, they are actually far fewer in number. In Wisconsin, less than one-third of businesses have employees (Figure 1).

Following the analysis of employer and nonemployer businesses, we focus on job creation and job loss resulting from the opening, closing, expansion, and contraction of employer businesses. We study these business dynamics and their effect on employment by business size and age. The analysis provides useful insight into the sources of job creation (and net job growth which is the difference between job creation and loss) as compared across business age and size categories.

Contemporary conventional wisdom says that small businesses are critical to job creation. New data and recent research, however, suggests that employment patterns (job creation and loss) are tied to both the size and age of firms. In particular,

new business start-ups (age zero) have a very important role in generating jobs.

The analysis presented in this report uses two types of comparisons to evaluate job creation and job loss in Wisconsin. First, we consider trends over time by comparing the most recent years available, 2012 or 2013 depending on the data source, with 2000 and 2009. Year 2000 is useful as an early benchmark during a period of relative economic expansion that occurred slightly before the dot.com bubble and well before the financial crises and recession. “The Great Recession” reached its depth in 2009. Comparing 2009 and 2013 provides some insight into the economic recovery in Wisconsin. As a second type of comparison, we benchmark Wisconsin against the U.S. average and its neighboring states.

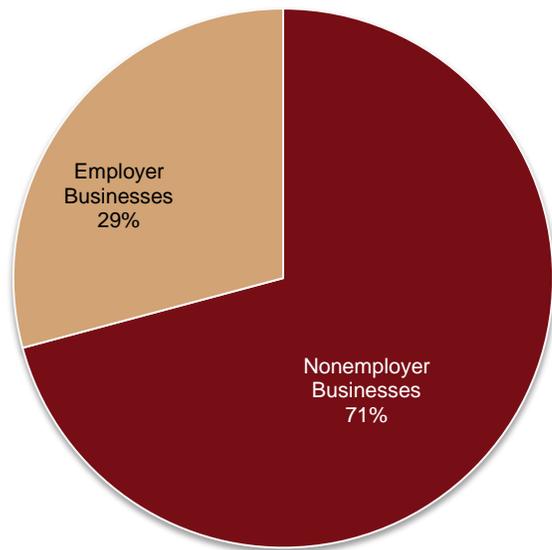
Nonemployer Businesses

Understanding employment dynamics begins with the source of jobs, namely Wisconsin businesses. For the analysis, businesses are divided into two categories, employer businesses with payroll employees and nonemployer businesses without payroll employees. Nationally and in Wisconsin, the large majority of businesses are nonemployers, sole proprietors or partnerships that provide a jobs and income only for the owners.¹ In Figure 1, we show that just 29% of businesses in Wisconsin have employees on their payroll. That means Wisconsin, like the rest of the country, is dependent on a

¹ Business owners may also work in a wage-and-salary position and/or own several businesses. We have no information on their primary source of income. Thus, nonemployer businesses may be only loosely correlated with measures of self-employment and entrepreneurship.

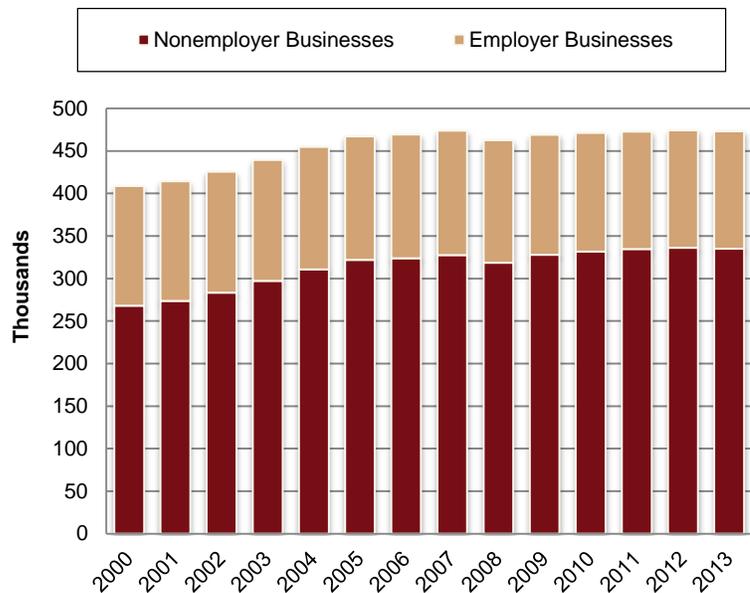
relatively small share of businesses to create and sustain payroll jobs.

**Figure 1:
Employer and Nonemployer
Businesses
Wisconsin, 2013**



The number of nonemployer businesses has consistently far exceeded employer businesses. As we show in Figure 2, the majority of Wisconsin's nearly half a million businesses have been nonemployers at least since 2000. In the most recent year available, 2013, there were 335,000 nonemployer businesses in Wisconsin compared with 138,000 employer businesses; a ratio of almost 2.4:1. In Figure 2, we can also see the rise in nonemployer businesses since 2000. Between 2000 and 2013, Wisconsin added 67,000 nonemployer businesses while the number employer businesses changed very little during the same period.

Figure 2: Nonemployer and Employer Businesses, Wisconsin

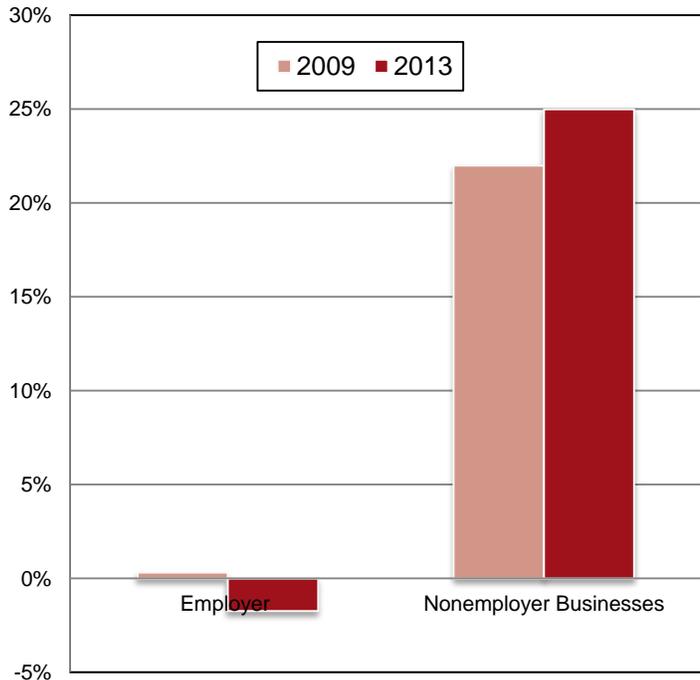


The number of employer businesses in Wisconsin has not grown compared with 2000 (Figure 3). In fact, as of 2013, the number of employer establishments was down nearly 2%. The stagnation of employer firms could have important consequences for employment in the state if it means that payroll job availability isn't keeping pace with the number of people in the labor force.

In comparison to employer businesses, the number of nonemployer establishments has increased dramatically. From 2000 to 2013, the number of nonemployer businesses in Wisconsin increased 25% (Figure 3). Further, it appears the growth trend in nonemployer continued through the Great Recession. By 2009 the number of nonemployer businesses had already

Figure 3: Change in Employer and Nonemployer Establishments in Wisconsin

Since 2000 as a percent of 2000 Levels



increased by 22% from the level in 2000. The relative growth in nonemployer businesses compared to employer businesses suggests a broad shift toward a “free agent” economy wherein self-employed workers are contracting their services rather than working as an employee of a larger organization (Weiler et al. 2013). Thus, the rise in nonemployer firms could result from larger firms laying off workers then hiring them back as contractors as well as from a growing number of people wishing to be self-employed.

The increase in nonemployer businesses in Wisconsin is part of a national trend; the nonemployer share in Wisconsin grew at approximately the same rate as the U.S. from 2000 to 2013 (Figure 4). Despite the growth, Wisconsin generally falls 4-5 percentage points below the U.S. average share of nonemployer businesses.²

Despite the recent growth (Figure 4) Wisconsin still had the smallest share of nonemployer businesses among Michigan, Illinois, Minnesota, Iowa, and the U.S. average in any given year (Figure 5). Mapping the share of nonemployer businesses by state for the contiguous U.S. (the related table of values is available in the data appendix) shows that the geographic concentrations of nonemployer businesses generally fall in the lower and coastal U.S., perhaps reflecting relatively large immigrant populations

Figure 4: Nonemployer Businesses as a Share of Total

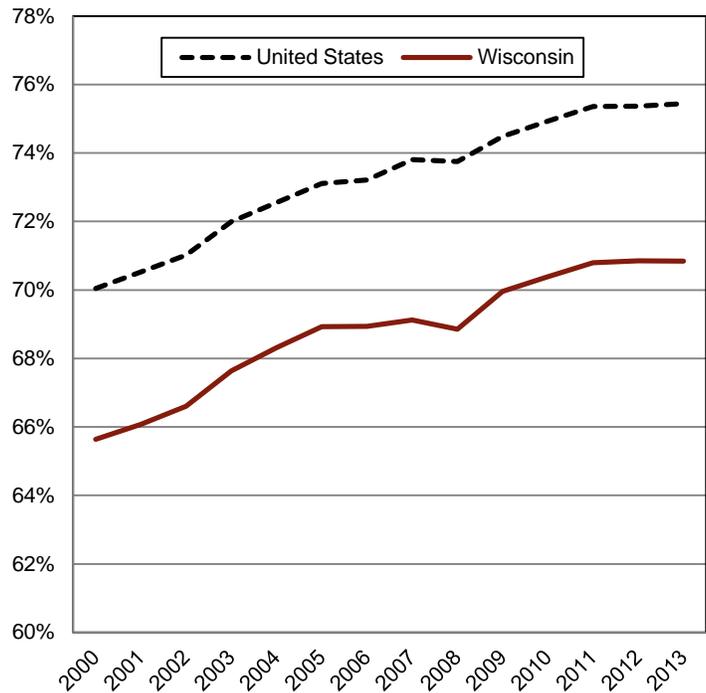
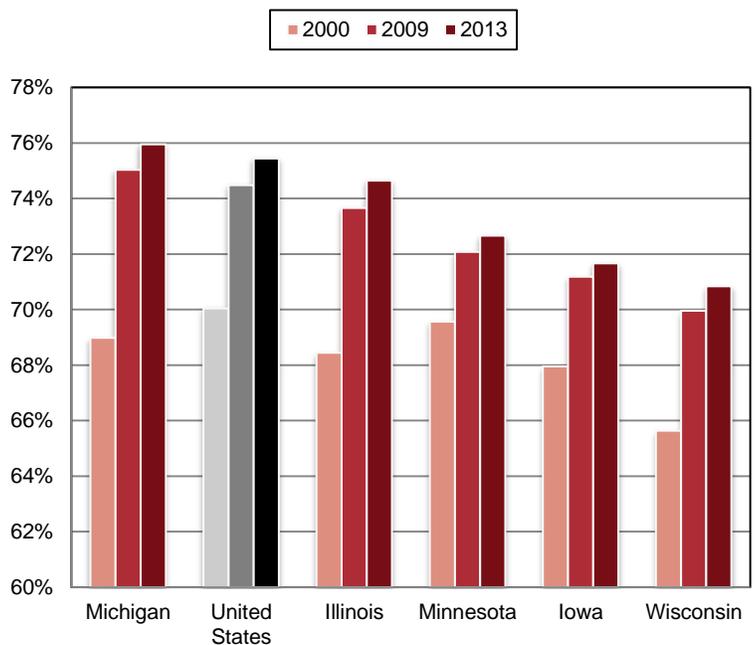
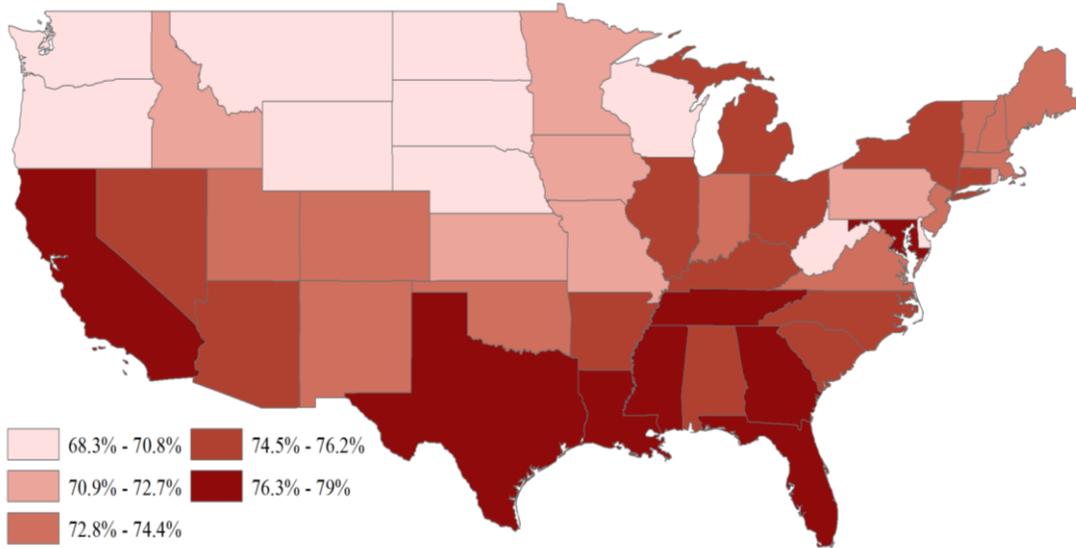


Figure 5: Nonemployer Businesses as a Share of Total



² It is important to note that these data do *not* include farm enterprises, which for Wisconsin and many other states is an important part of the economy.

Figure 6: Nonemployer Businesses as a Share of Total, United States 2013



that tend to be especially entrepreneurial (Figure 6). In general, states that are considered entrepreneurial such as California, Colorado, North Carolina, and New York, also tend to have relatively high shares of nonemployer establishments.

The geographic distribution of non-employer concentrations across Wisconsin reveals a similar pattern in the prevalence of nonemployer businesses (Figure 7, the related table of values is available in the data appendix). Even in Wisconsin counties, non-employer establishments represent the majority of businesses ranging from roughly to two-thirds in Outagamie, Brown and La Crosse counties to over 80% in Menominee County.

Figure 7: Nonemployer Businesses as a Share of Total, Wisconsin Counties 2013

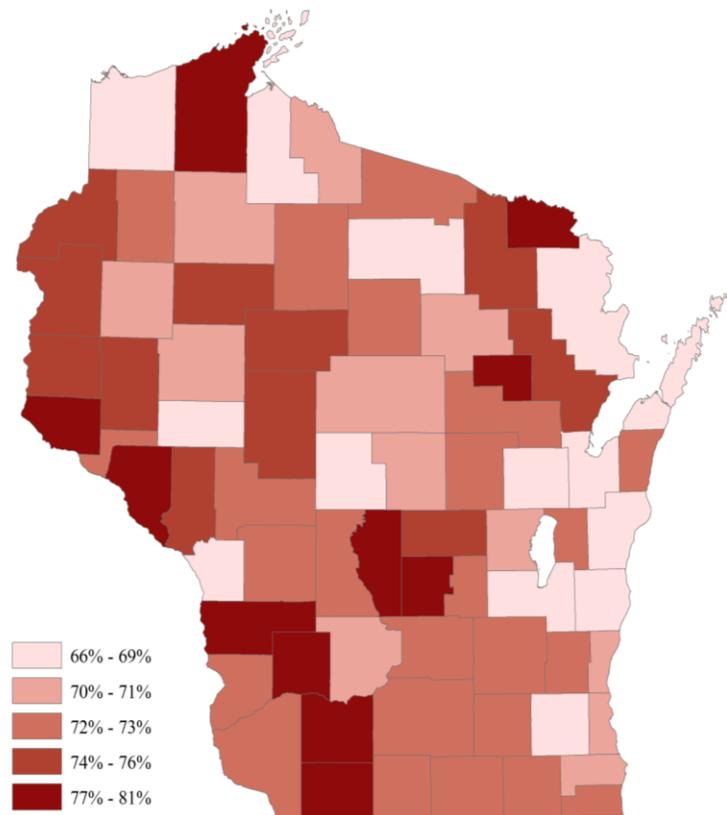
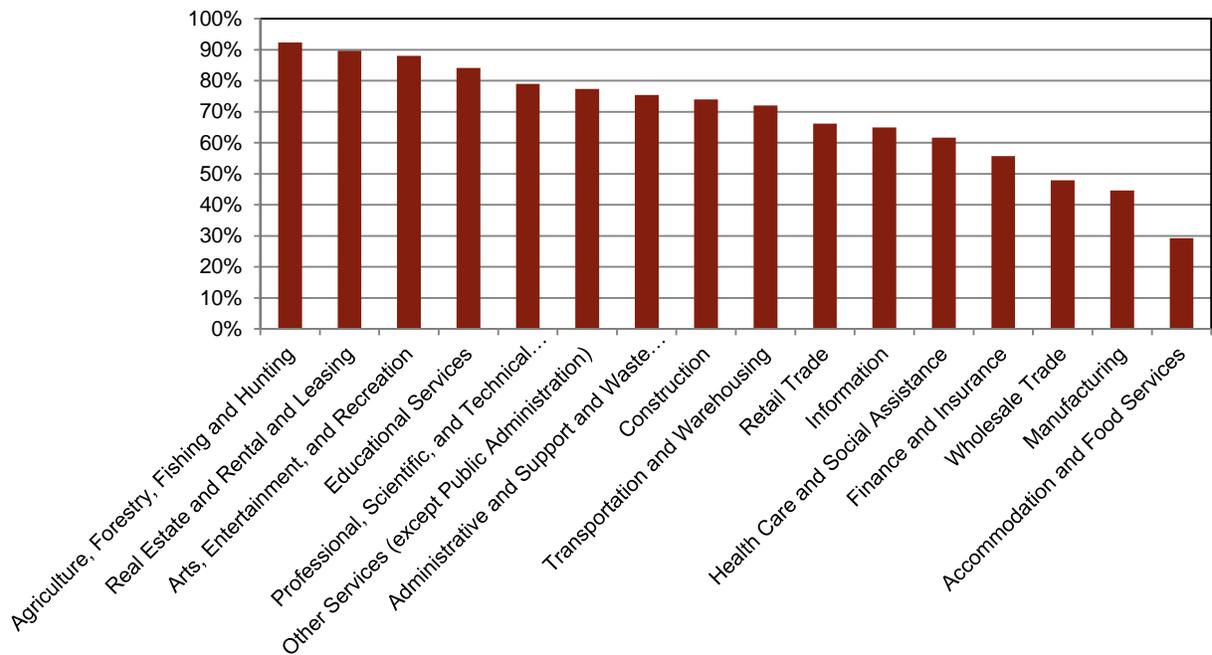


Figure 8: Nonemployer Businesses as a Share of Total, by Sector Wisconsin, 2013



By industry in Wisconsin, non-employers are concentrated in non-farm Agriculture, Fishing and Hunting, as well as Real Estate, and the Arts, Entertainment, and Recreation sectors (Figure 8), which is consistent with the structure of these particular sectors. Many businesses within non-farming Agriculture, Fishing and Hunting can be best described as independent contractors such as independent foresters or custom farm contractors. Many real estate agents are also independent contractors who are aligned with a larger brokerage firm. This is also true for many artists and/or

entertainers who are, from a business perspective, self-employed. The Wholesale Trade, Manufacturing, and Accommodation and Food Services have comparatively small shares of non-employers, again consistent with the nature of these particular industries and the character of typical businesses in each field.

As noted above, analysis of non-employer business concentrations alone does not provide for inference on the sources of job creation and job loss, but it lays a important part of a foundation to better answer our basic questions.

Non-employer businesses, the smallest possible type of business, are often the seedbed of entrepreneurial activity. Wisconsin has a relatively smaller share of these types of businesses than either the U.S. or our neighboring states. Is this a threat to the Wisconsin economy or an opportunity?

Employer Businesses

In the previous section, we provided a baseline examination of the type of businesses in Wisconsin and across the U.S. and found that the majority of businesses are the very small, specifically non-employer businesses. Though these non-employer businesses cannot directly help us understand job growth dynamics, clearly we need to explore the role of the self-employed for a broader understanding of job patterns.

The next step of our analysis is to focus on gross job creation. Job creation necessarily comes from employer businesses, thus going forward we implicitly focus on the small share of businesses with employees. Though many people work as business owners or partners in nonemployer businesses we will ignore jobs created in this form of self-employment and focus on new payroll jobs, particularly those in small businesses. As noted before, some people may be gainfully employed by a company with several employees, but also own separate small businesses on the side. We focus only on jobs in employer businesses ignoring the fact that some people may also have a job working in their own business(es).

It is important to note that the analysis focuses on *changes* in employment, jobs added and/or jobs lost, a dynamic concept, but not employment itself, a static concept. So, a firm with 100 employees that did not hire (expand) or lay-off (contract) any workers would have no affect on the analysis. A stable firm with workers is certainly an important component of Wisconsin's economic performance, but stable firms do not contribute to the

dynamic processes that result in employment growth, the focus of our analysis.

A Better Understanding of Small Businesses

Promoting small business has long been emphasized in U.S. economic growth and development strategies. Policies at all levels of government including the Small Business Act of 1953, have been designed to support small business. In large part, the focus on small business is motivated by the idea that small businesses are engines of economic growth primarily through job creation.

The first research linking small businesses to job creation was published over 30 years ago, research by MIT economist, David Birch. He challenged the notion that large businesses were the dominant source of job growth. Rather, he argued that fundamental shifts to the economy had resulted in an increasingly important role for small businesses with fewer than 100 employees (Birch 1979, 1981, 1989). Birch's research conclusions quickly became conventional wisdom and have been used to reinforce U.S. policy and advocacy to support small businesses. His findings have since been cited to advocate for favorable tax policy, government regulation, and support programming.

Simple descriptive analysis does show that smaller (fewer than 100 employees) rather than larger firms have higher employment growth. Since Birch's early research, however, data and methods have improved, leading to a better understanding of small business. Small businesses, are not always high growth. Many small businesses are Julien-type firms

meaning the owner-operator has no plans or goals to grow the business beyond a certain size. Many small business owners prefer to “work the business” as opposed to “manage the business” as it grows. A furniture maker, for example, prefers to focus on actually making the furniture with a small handful of employees as opposed to operating a larger business that draws her time away from the primary reason for starting the business.

The more sophisticated analysis since the original work of Birch highlights that high employment growth is not necessarily linked to business size. Instead job creation is linked to both size *and* age. It does seem to be true that small business create a large share of jobs, but when we consider that small businesses also tend to be young, the importance of business age also becomes apparent. Thus we explore job creation by age and by size in the following sections.

Job Creation by Business Size

One of the challenges in the study of small businesses reduces to a matter of definition: what size firm constitutes a “small business”? The U.S. Small Business Administration defines the small business threshold as 500 employees, but researchers often use a threshold of 250 or less.³ The Association for Enterprise Opportunity define a small business as less than five employees.⁴ Thus, rather than use an

³ Becker, Demirgüç-Kunt, and Levine (2003) along with Aquilina, Klump and Poetrobelli (2006) use a threshold of 250 employees. Robbins and colleague (2000) uses a threshold of 20 employees.

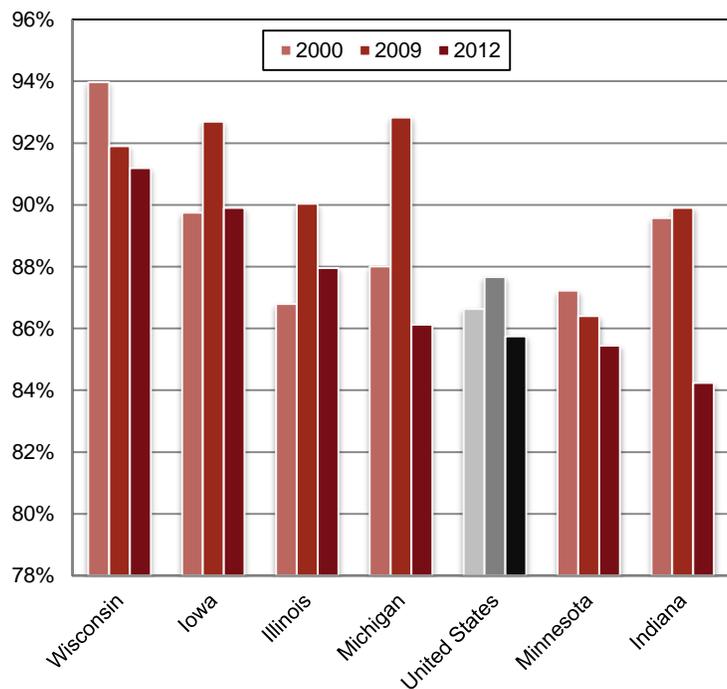
⁴ Deller and McConnon (2009) and Deller (2010) define a small business as less than five employees.

arbitrary definition we group businesses by several employee size classifications.

Small businesses, defined as those with less than 500 employees, employ just over 80% of workers in Wisconsin.⁵ Consistent with conventional wisdom, most new jobs in Wisconsin and the U.S. also come from small businesses. Over 90% of gross job creation comes from small businesses (Figure 9). Compared with neighboring states and the U.S. average, the share of job creation from businesses with less than 500 employees in Wisconsin is relatively high. The share of job creation from small businesses has, however, declined slightly since 2000, down three percentage points.

Given the large shares of employment (~80%) and job creation (~90%) in small

Figure 9: Share of Job Creation From Businesses with Less than 500 Employees



⁵Source: Author’s calculation of BDS data.

businesses with fewer than 500 employees, we focus exclusively on these firms going forward. We further categorize firms with fewer than 500 employees into multiple size classes and compare their share of employment with their share of job creation (Figure 10). Notice that businesses with greater than 50 employees contribute less to job creation than their share of total employment. Businesses in the size categories with less than 20 employees account for more job creation than their share of total employment. The disproportionately large share of job creation is particularly evident for the smallest firms, those with between five and nine jobs and especially those with less than five employees. In Wisconsin, most of job creation (roughly 50%) has come from smaller businesses, namely those with fewer than 20 employees. This pattern has been relatively consistent over the study period (Figure 11).

Thus, even ignoring the role of non-employer businesses, most of the job growth in Wisconsin, and indeed the nation, comes from smaller businesses, particularly those with less than 20 employees.

In Wisconsin, most job creation (roughly 50%) has come from the smallest businesses, namely those with fewer than 20 employees.

Figure 10: Share of Total Employment vs. Share of Total Job Creation By Business Size Class 2012

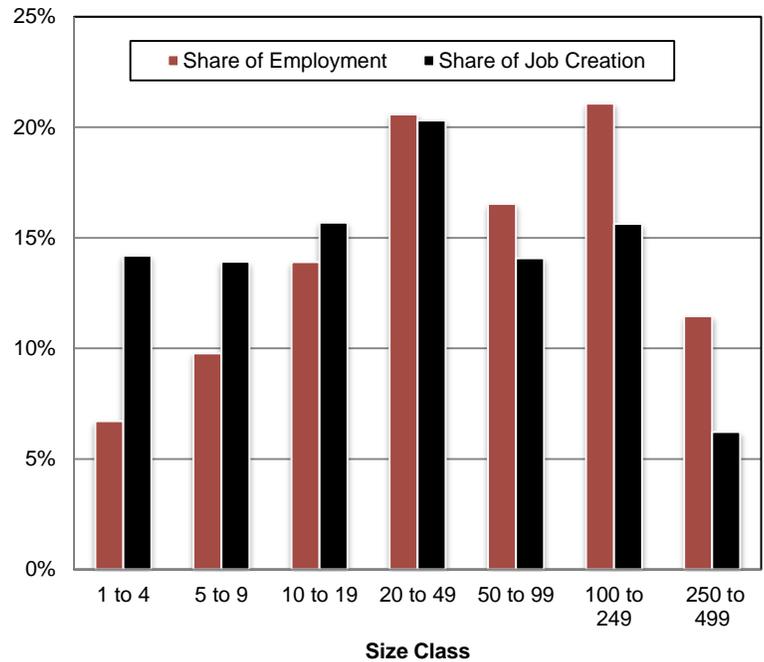
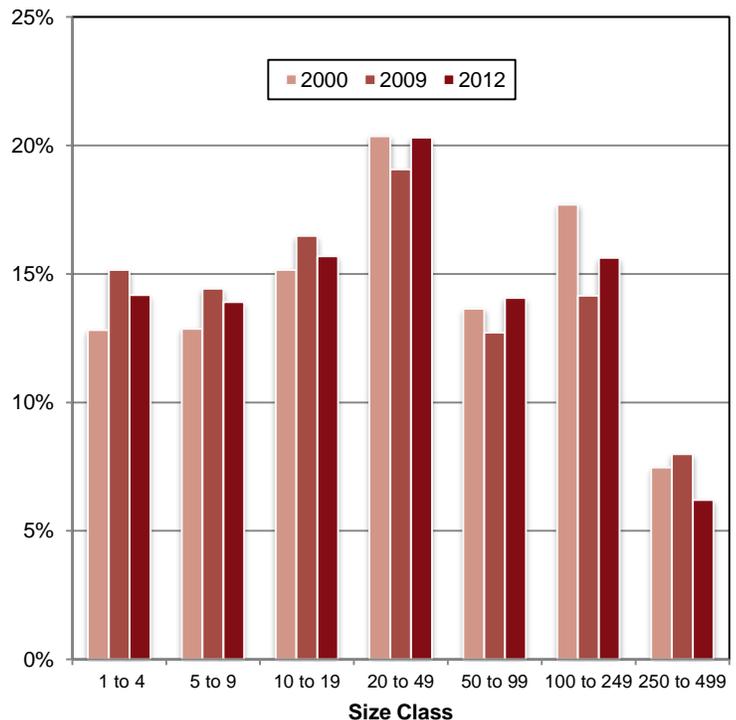


Figure 11: Share of Job Creation by Size Class Wisconsin



Small vs. Young Businesses

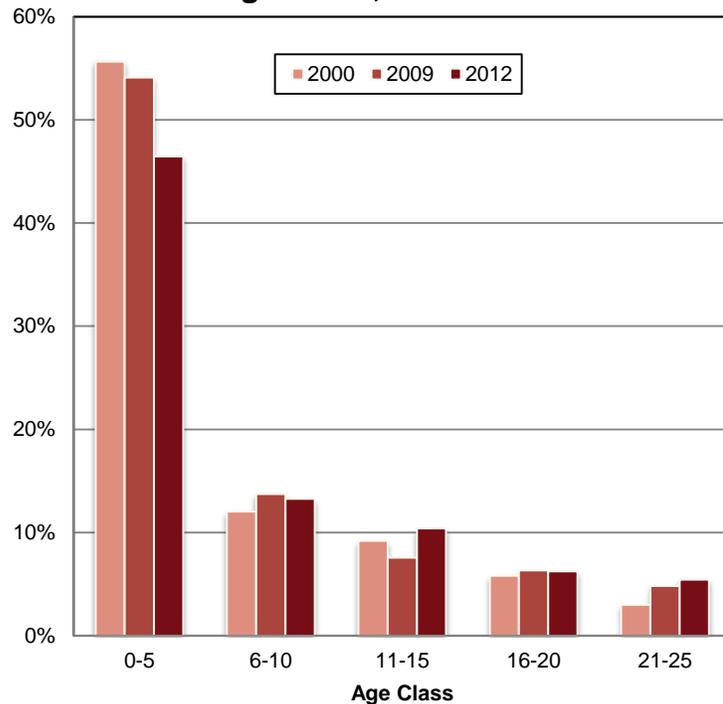
Our simple analysis for Wisconsin demonstrates how the early research led to the conclusion that small businesses are key to employment growth (Birch 1979, 1981, 1989). These prior studies, unfortunately, suffer from a number of methodological weaknesses and data shortcomings. Early studies often did not or could not account for business age; they could only account for size. Without controlling for age, it appears that small businesses are responsible for a disproportionately large share of job creation.

New research has enriched our understanding of job creation; job creation may, in fact, be more closely linked to business age than size. Haltiwanger et al. (2013) find that young businesses are a key component of job creation. The early finding that small businesses are job engines now appears to be driven by the fact that new and young businesses simply happen to be small. Thus age, rather than size, is the more fundamental factor to determining job creation by Wisconsin businesses.

Job Creation by Business Age

The Business Dynamic Statistics (see data appendix for details), begins tracking businesses when they transition from zero to positive employment. That is, a business is “born” when it hires its first employee(s). This method of tracking firms implies that an establishment birth may correspond to an entirely new or *de novo* establishment that begins with employees. A birth may

Figure 12: Share of Job Creation by Age Class, Wisconsin



alternatively correspond to an important growth stage for a firm: expanding from a non-employer sole proprietorship or partnership to an employer establishment. An example would be an independent real estate agent (i.e., a non-employer firm) hires an assistant (i.e., moves from a non-employer firm to an employer firm), at which point it would enter the data as an Age 0 establishment.

By age, most job creation in Wisconsin comes from the state’s youngest establishments (Figure 12). New and young businesses ages 0-5 years, generate close to 50% of gross job creation in Wisconsin, however, that share has been decreasing over time. Generally, more mature firms ages 6-25 generate just a fraction of the job creation generated by the youngest size class.

Next, taking a closer look at job creation by the youngest businesses in Wisconsin (Figure 13), we show job creation separately for new (age 0) businesses and for each age year from one to five years old. Clearly, new businesses account for the largest share of job creation. In 2012, more than 25% of job creation in Wisconsin came from startup (Age 0) businesses, down from more than 30% in 2000. Comparatively, relatively small shares of job creation came from businesses one to five years old.

How does Wisconsin compare to its immediate peer states and the U.S. average with respect to job creation from new (Age 0) businesses (Figure 14)? In Wisconsin and its neighbor states, generally, a smaller share of job creation comes from new establishments than the U.S. average. Typically in the U.S., close to one-third of job creation comes from new establishments alone, but the share of job creation from establishment births has been declining. Similarly, in most of the states, job creation from births in 2012 is well below that in 2000 and 2009—perhaps indicating that many states are still recovering from The Great Recession. This is not unexpected given the tightness of credit markets and the relatively slow pace of the recovery.

In 2012, more than 25% of job creation in Wisconsin came from startup businesses, down from more than 30% in 2000.

Figure 13: Share of Job Creation by Young (Age 0-5) Establishments Wisconsin

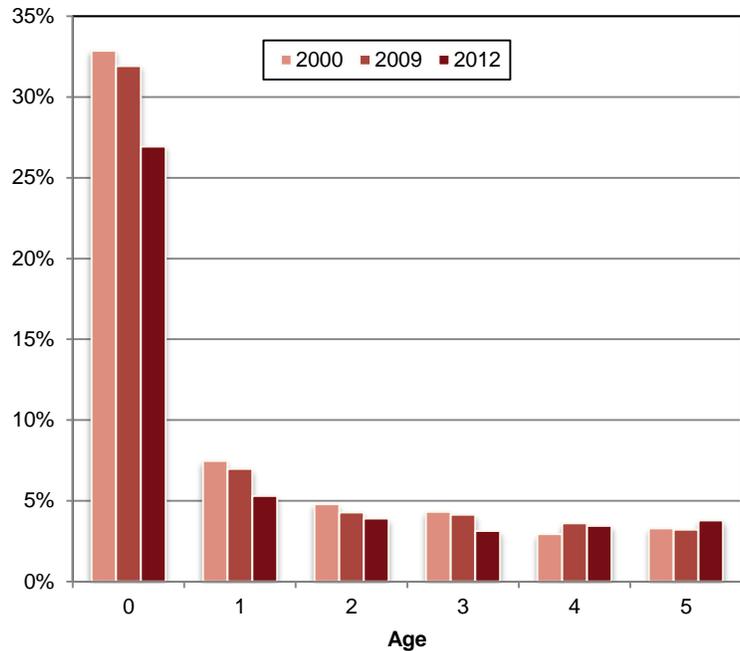


Figure 14: Share of Job Creation From Establishment Births (Age 0)

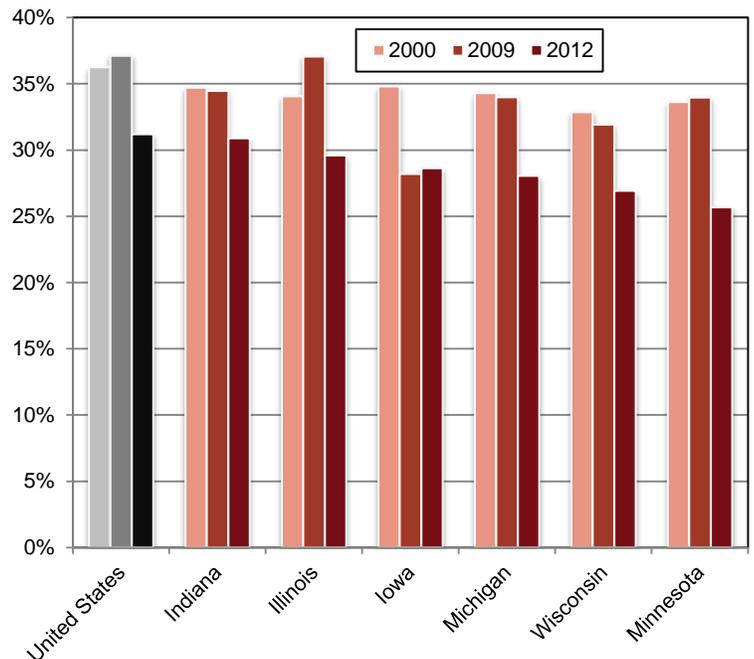
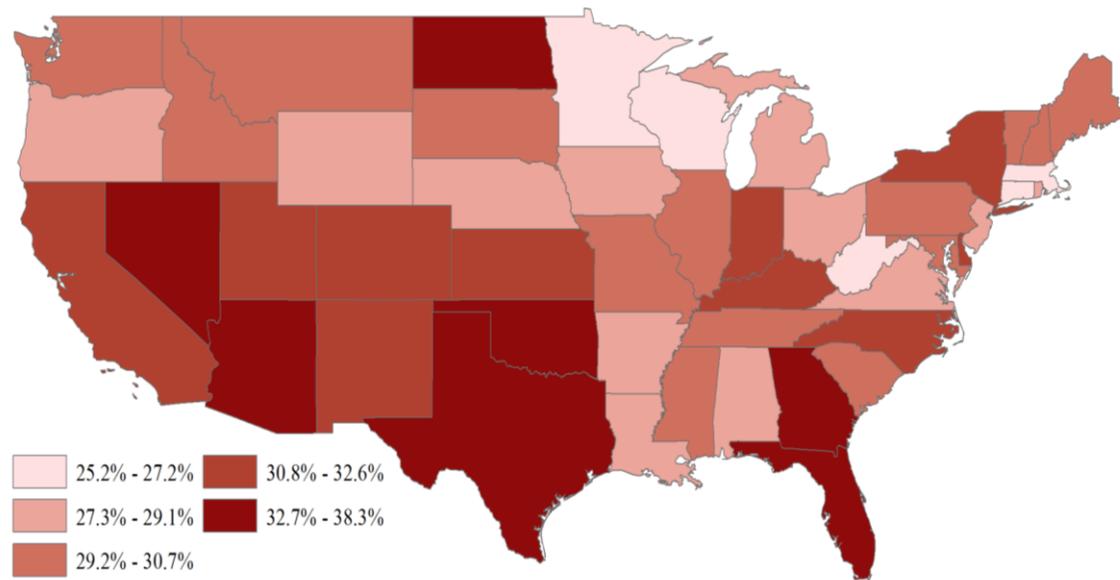


Figure 15: Share of Job Creation from Establishment Births, 2012



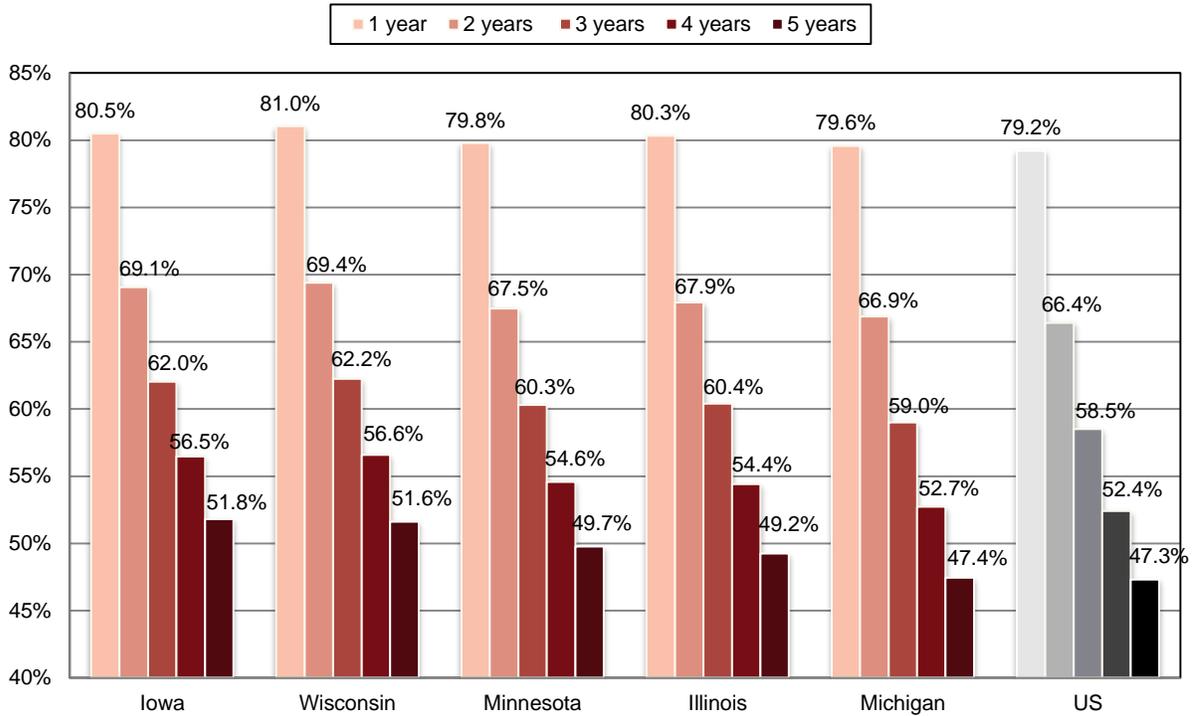
To further explore how Wisconsin compares to the nation, a simple map of the share of job creation from establishment births for the contiguous United States is provided in Figure 15 (the related table of values is available in the data appendix). Compared to the other lower 48 states, Wisconsin has a relatively small share of job creation from establishment births, ranking 47th in 2012. Given the importance of new start-ups to job creation the relatively low ranking for Wisconsin helps us better understand why Wisconsin's recovery from the Great Recession has been one of the slowest in the U.S.

We have shown that, in general, the share of job creation from new businesses in Wisconsin is small relative to other states but still quite large compared to any other age group. The jobs generated by new and young businesses are relatively risky because new businesses are more

vulnerable to failure especially during their first five years. Many small business advisors suggest that if a new business is not achieving its financial goals (e.g., profitability) by the end of the third year of operation, the business should consider closing or fundamentally altering its business plan. Thus, new businesses that survive through year five are generally considered successful.

Consider the survival rate of new businesses that started between 1998 and 2007 during their first five years (Figure 16). Generally, the survival rate for Wisconsin is high compared to its neighbor states and the U.S. average. In Wisconsin, 81% of businesses survive to be one year old or, in other words, 19% of businesses fail during their first year. After five years, nearly 52% of businesses were still operating, more than four percentage points above the average five-year survival rate for the U.S.

**Figure 16: New Business Survival Rate
1998-2007**



With each business contraction or closure, jobs are lost. As shown by the survival rate, young businesses are especially vulnerable to failure. Consequently, the share of job loss from young businesses parallels their share of job creation. Much like roughly 1/3 of job creation comes from new businesses, it is also the case that roughly 1/3 of job loss comes from young businesses that fail or layoff workers during their first five years.

In Wisconsin, the share of job loss has consistently been lower than the U.S. average and its neighbor states, however, but that may simply reflect the relatively low start-up rate in Wisconsin and consequently smaller share of young businesses overall. It could also be that, because Wisconsin entrepreneurs are more conservative, the likelihood of job loss from closure is lower.

Like recent research (e.g. Haltiwanger et al. 2013) our findings suggest that new and young businesses generate large shares of job creation. In particular, new businesses generate substantial job creation. New businesses, however, are also more likely to fail especially during their early years, so job loss from establishment closings and layoffs is also quite high.

In Wisconsin, and across the nation, new business start-ups are key to job creation. Equally important is the survival rate of those new start-ups. The question is can Wisconsin craft policies that encourage new business start-ups and support them in the key first three to five years of operation?

Net Job Creation

As shown in the previous section, businesses both create and destroy jobs. This is a natural outcome of healthy business dynamics, or churning. Yet some studies of employment focus only on the resulting *net* job creation. The monthly and quarterly employment reports from the Bureau of Labor Statistics (BLS) which are often cited by the media, for example, tend to focus on net jobs created. As noted in our introductory comments to this study, focusing on the net employment change conceals much of the job churn that occurs in the labor market. Net job creation is the result of much larger effects, namely the balance between gross job creation and job loss.

The net change in employment is often quite small relative to its two component parts. As shown in Figure 18, gross job creation and job loss are each equal to 10-15% of total employment whereas net job creation is generally less than 5% of total employment. On average from 2000 to 2012, net job creation was equal to just 1.2% of total employment in Wisconsin.

In general gross job creation and job loss generally track closely (Figure 18). In most years, gross job creation narrowly exceeds job loss resulting in a small margin that is net job creation. During the Great Recession, job loss increased but gross job creation also decreased, perhaps because the startup activity that drives gross job

Figure 17: Job Loss by Young (Age 0-5) Establishments

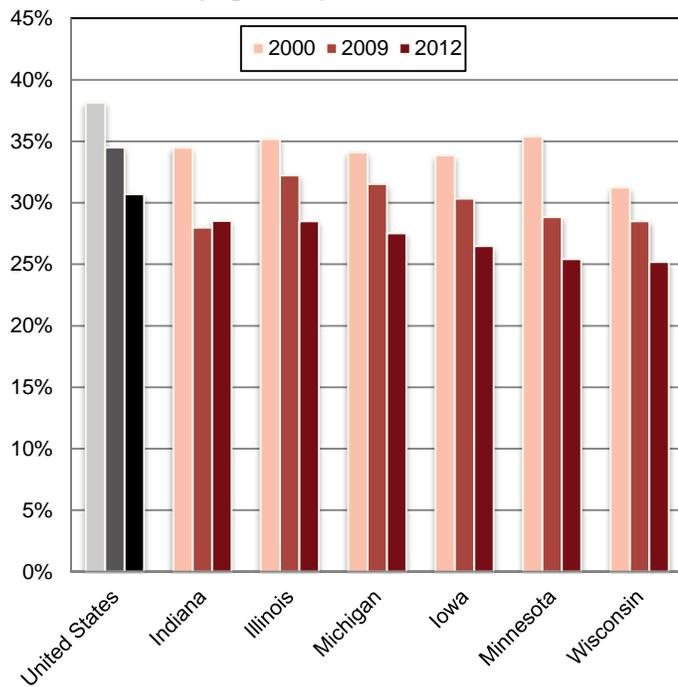
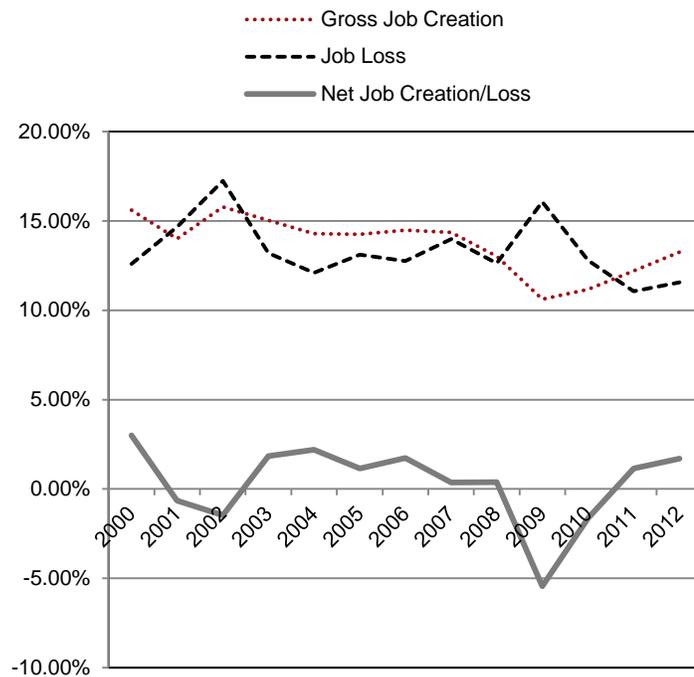


Figure 18: Job Creation and Loss as a Share of Total Employment



creation slowed dramatically; starting new businesses during and immediately after the Great Recession was extremely difficult.

The balance between job creation and loss during an economic downturn or recession is seldom fully understood. People generally associate a recession or rising unemployment rates almost exclusively with job loss (workers being laid off). Equally important is the slowdown in job creation: businesses are not creating new jobs for those that have been laid off or new workers entering the labor force.

Returning to a core question of how business age relates to employment dynamics, we report gross job creation and job loss for new businesses, for each age from one through five, and then in five-year increments thereafter (Figure 19). In 2012, new businesses (age 0) were the only establishments that generated substantial job creation, aside from the very narrow gains from age two establishments. By definition, new businesses only add jobs, partly explaining their large contribution to job creation.

Rather than gross job creation and job loss, we focus only on the net effect to simplify our discussion (Figure 20). Again, the overwhelming importance of new businesses is clear. In Wisconsin in 2012, business start-ups (age 0) accounted for more than 100% of net job creation, offsetting the negative

Figure 19: Job Creation and Loss by Age Class, 2012

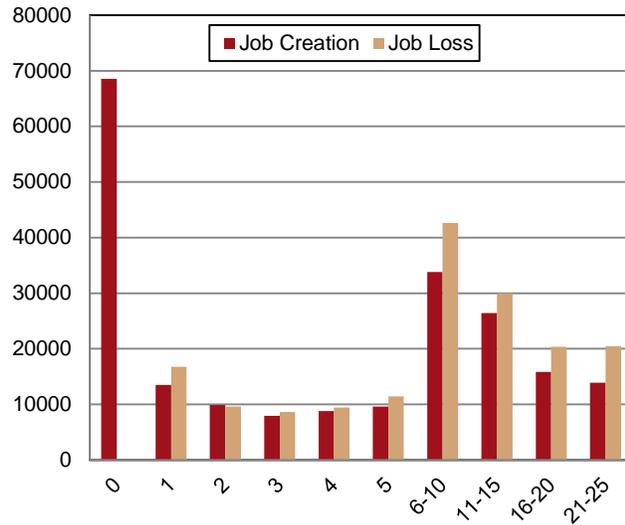
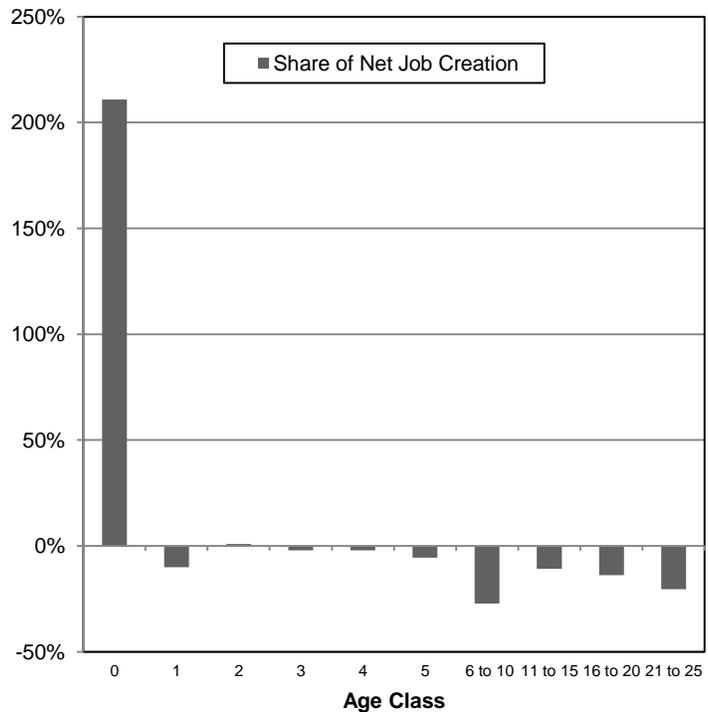


Figure 20: Share of Net Job Creation By Age Class Wisconsin, 2012



effect of job loss in other age categories.

New businesses can start at any size, but they are typically small (Figure 21). The positive job creation from establishment births in Wisconsin is distributed across nearly all size categories, but most job creation comes from new businesses that start in the smallest size categories. More than half of job creation from new businesses comes from those that start with fewer than 20 employees.

The fact that new businesses start at all sizes helps explain why job creation exceeds job loss across all size categories, as we show in Figures 22 and 23, but not all age categories (Figures 19 and 20). Likely the new businesses in each size category are driving gross job creation and thereby positive net job creation, particularly in the smallest size categories where most new businesses start.

Without new firm start-ups Wisconsin would be experiencing significant job loss. (Figure 19)

Figure 21: Job Creation from Establishment Births By Size Class Wisconsin, 2012

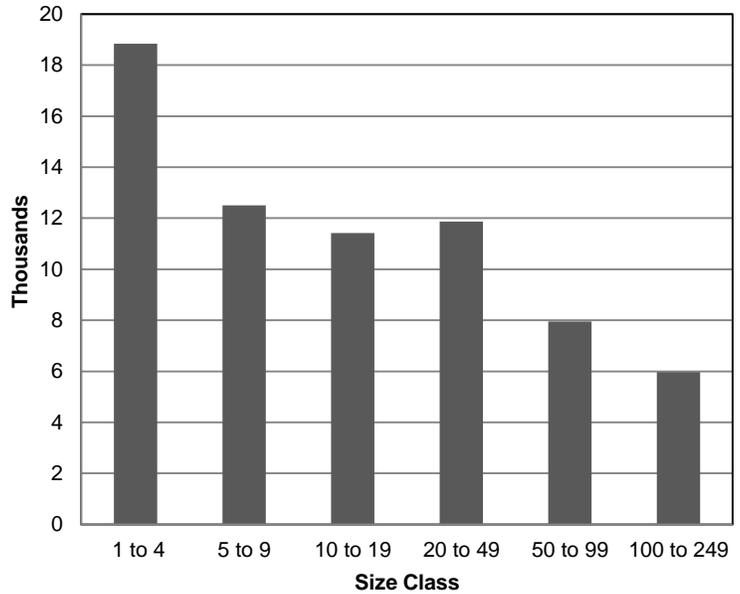
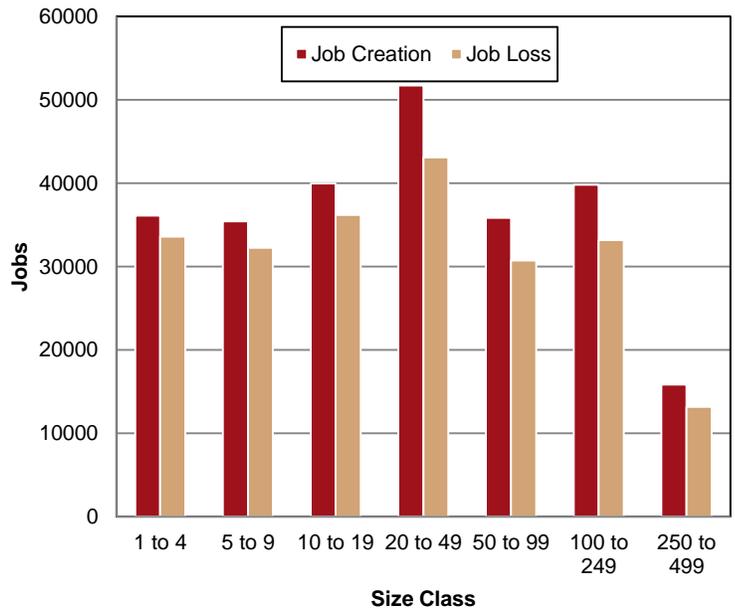
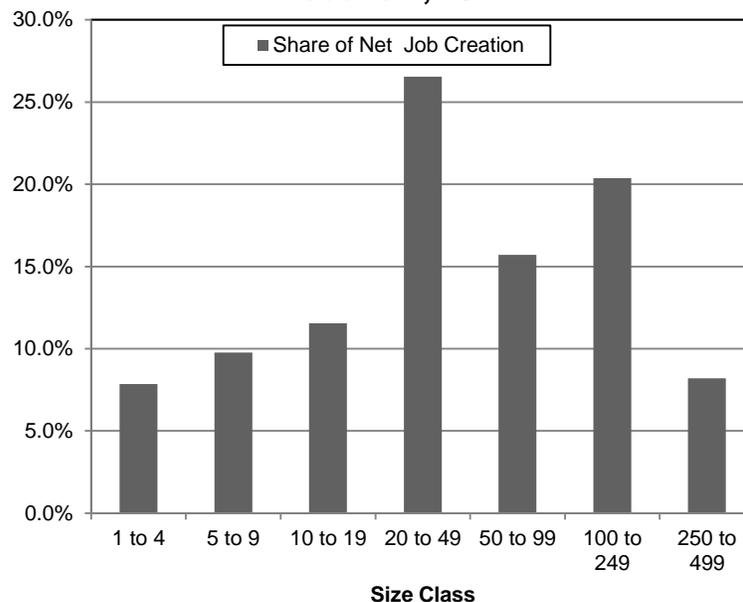


Figure 22: Job Creation and Job Loss by Size Class, 2012



In Wisconsin, small businesses did contribute positively to net job creation as we show in Figures 22 and 23. Depending on the way sizes are grouped together, it is also the case that small businesses contributed more than larger businesses. But taken together the data (Figures 22 and 23) suggest that positive job creation across age classes is likely driven by new business across all sizes, but especially in the smallest size categories. Thus age, more so than size, drives positive net job creation.

Figure 23: Share of Net Job Creation by Size Class Wisconsin, 2012



Discussion and Policy Implications

Nonemployer Businesses

The rise in nonemployer businesses in Wisconsin and across the country is striking. While a rigorous analysis of what may be causing this trend is beyond the scope of this analysis, there are several possible explanations with direct policy relevance. The expanding capabilities of technology may allow firms to operate with a leaner workforce. Businesses may no longer need as many accounting and administrative positions, for example, because some of those activities can be managed with software and technology services. Hence, expanding broadband, particularly in rural Wisconsin, could be instrumental to helping workers and businesses successfully adapt to this shift.

The University of Wisconsin-Extension broadband initiative, for example, has helped install 591 miles of fiber optics installed, 186 community anchor institutions connections (e.g., 32 schools, 5 libraries, 10 community colleges, amongst others) and 15 active towers installed across rural Wisconsin. Increasingly, these types of investment are becoming necessary for business development and job creation.

Perhaps more importantly, the trend in nonemployers may be indicating a shift in the economy to more contract work and self-employment. Instead of having large businesses with in-house creative, law, and accounting departments, businesses now outsource those tasks; they hire contractors to handle marketing, web design, legal, and financial services. Such a shift in employment practices would imply that there are now several smaller businesses, many of them contractors, in

place of what may have historically been one larger employer business. Some policies, such as the Affordable Care Act, may have accelerated the trend in nonemployers by making healthcare benefits more accessible to people outside of organization employment. Without the “job lock” due to employer-based health insurance, workers may be more likely to leave their employer to pursue their own entrepreneurial venture.

One concern over the rise in self-employment could be the quality of employment. Self-employment can be associated with more uncertainty, lower pay, and fewer benefits, which may, in turn, affect income inequality. What we cannot ascertain from the data used in this study is the extent to which people are being forced into low-quality self-employment for lack of other job opportunities or electing self-employment for non-monetary (i.e., income) reasons such as the challenge or more flexible work schedule. Here the self-employed may willingly trade certain characteristics of job quality for other factors.

Linking Nonemployer Businesses to Job Creation

The sole proprietors and partnerships that comprise the share of nonemployer businesses represent an important phase of the business growth pipeline. New businesses often start small, employing just the owners, and eventually grow into sources of payroll employment. Thus, entrepreneurial states with lots of start-up activity and related job creation (i.e. California, Colorado, and New York) generally have an above average share of nonemployers.

The transitional link from nonemployer-to-employer may be especially important Wisconsin. The nonemployer share of businesses is quite low in Wisconsin (ranking 41st among the states). The relatively small share of nonemployers means there are fewer businesses at the earliest stage of growth in the small business pipeline. That is, there are fewer businesses that may eventually expand to have payroll employees. Recall that job creation from establishment births includes jobs in entirely new firms with employees and nonemployer businesses that have hired their first employees and thus transitioned into employer businesses. Unless new establishments that begin with employees offset the shortage of births that come from nonemployer-to-employer transitions in Wisconsin, there will be fewer new employer businesses and less job creation. Thus, the small share of nonemployer businesses may be tied to why Wisconsin has relatively low job creation from births, ranking 47th among the states.

Conclusion

The analysis of employment dynamics by business age and size combined with the insights on nonemployer firms indicate that the process of job creation is not simply the result of small business activity. The process is more complicated—tied to size, age, and new business formation. Employment policy design requires a rich, nuanced understanding of the components of net job creation in terms of business openings, closings, growth, and decline. Haltiwanger et al. (2013) write, “...policies that target businesses of a certain size, while ignoring the role of age, will likely

have limited success in improving net job creation.”

Employment policies are made even more complex by adding the dimensions of job quality and opportunity. In terms of quality, jobs in new businesses tend to be riskier and have fewer benefits. Increasing benefit offerings and enhancing the stability of jobs in young firms, may require policy intervention aimed at enhancing survival rates. In terms of opportunity, the rise in nonemployer businesses may be attributable to people actively selecting self-employment or it could that they are

being forced into self-employment because of the lack of payroll employment opportunities. The publicly available data used for this report make it difficult if not impossible to thoroughly understand such issues but it does demonstrate the importance of careful strategies for employment growth. Designing policy to support job creation must be multifaceted—concerned with quantity and quality as well as aware of how both business age and size will determine state-level employment dynamics.

Returning to our central question about the source of job growth is it younger or older firms, small or larger firms the answer appears to be “younger smaller firms” and for Wisconsin age (new business start-ups), more so than size, drives positive net job creation. Older larger businesses tend not to be a source of employment growth in Wisconsin.

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Data Appendix

Sources:

County Business Patterns (CBP)

County Business Patterns is an annual series from the U.S. Census Bureau that provides data on U.S. establishments that are subject to the federal income tax and had paid employees any time during the year.

<https://www.census.gov/econ/cbp/>

Nonemployer Statistics (NES)

Nonemployer Statistics is an annual series from the U.S. Census Bureau that provides data on U.S. establishments that are subject to the federal income tax. They have annual business receipts of \$1000 or more (\$1 in construction) but have no paid employees. Nonemployer statistics provide the complementary statistics on establishments that do have paid employees provided by the CBP. Most nonemployer businesses are sole proprietorships, an unincorporated business operated by the self-employed owner but may also be an unincorporated partnership, or a corporation without employees.

<https://www.census.gov/econ/nonemployer/index.html>

Business Dynamic Statistics (BDS)

The Business Dynamic Statistics is annual series that measures job creation, job destruction, establishment births, establishment deaths, and other business dynamics. The BDS is

generated using the Longitudinal Business Database, which provides for tracking establishments over time.

<http://www.census.gov/ces/dataproducts/bds/>

Key Definitions:

Business: A business is generally synonymous with an establishment. An establishment is a single physical location where business is conducted, services are rendered, or industrial operations are performed. In the Nonemployer Statistics, however, each distinct income tax return is treated as a firm. Thus, within the Nonemployer Statistics the Census makes no distinction between a firm and an establishment.

(Establishment) Birth: An employer establishment birth marks a transition from zero to positive employment. That is, an establishment birth may correspond to an entirely new or *de novo* establishment that begins with employees. A birth may alternatively correspond to an important growth stage for a firm: expanding from a non-employer sole proprietorship or partnership to an employer establishment.

Firm: A firm is an organization consisting of one or establishments (see Business) that share common ownership. The firm and establishment are equivalent entities in the case of single-establishment firms.

For additional information see the sources used to generate our definitions:

- (1) <http://www.census.gov/econ/cbp/definitions.htm>
- (2) <https://www.census.gov/econ/nonemployer/definitions.htm>, and
- (3) <http://www.census.gov/ces/dataproducts/bds/definitions.html>.

Methods:

Figures 1-8

For Figures 1-8 the total number of businesses is equal to the sum of employer and nonemployer establishments from the CBP and NES, respectively. The shares of employer and nonemployer businesses are equal the ratio of their respective number of establishments to the total. The growth in nonemployer and employer establishments (Figure 3) are each calculated as the ratio of the change in establishments from base year to year t to the level in base year.

Figure 9

The share of job creation from small businesses is calculated from BDS data. It is the ratio of job creation from establishments with fewer than 500 employees to total job creation. Total job creation includes job creation by establishments in all size categories including those with 500 or more employees.

Figure 10

The share of employment in each size class is calculated from BDS data. For each size below 500 employees, their respective share of employment is the ratio of employment in that class to total employment in establishments with fewer than 500 employees. See Figure 11 for details on the share of job creation.

Figure 11

The share of job creation by size class is calculated from BDS data. For each size class below 500 employees, their respective share of job creation is the ratio of job creation by establishments in that class to total job creation by establishments with fewer than 500 employees.

Figure 12-15

The shares of job creation by age class are calculated from BDS data. For each age class below 25 years old, their respective share of job creation is the ratio of job creation by establishments in that class to total job creation by establishments with fewer than 500 employees. The shares of job creation in Figure 11 do not sum to 100% because the category for establishments ages 26+ is not included.

Figure 16

Figure 15 is calculated from the BDS data. The denominator is equal to the total number of new businesses that started between 1998 and 2007, or the sum of all entry by Age 0 establishments from each year spanning 1998 to 2007. The one-year survival rate reflects the sum of establishments operating at age 1 across the interval from 1999 to 2008, less entry by establishments. The survival rate at each subsequent yearly interval is calculated similarly.

Figure 17

Figure 16 is calculated from BDS data. The denominator is total job destruction equal to the sum of job destruction by businesses with fewer than 500 employees. The share of job destruction by young businesses is the ratio of job destruction in businesses ages 0-5 to total job destruction.

Figure 18

Figure 17 is calculated from the BDS data. The denominator is total employment in businesses with fewer than 500 employees. The gross job creation rate is the ratio of total gross job creation in businesses with fewer than 500 employees to total employment. The job destruction rate and net job creation rate are computed similarly.

Figures 19 and 22

Figures 18 and 20 are calculated from the BDS data. Gross job creation and job destruction for each age and size class, respectively, are equal to the sum for each class for businesses with fewer than 500 employees.

Figures 20 and 23

Figures 18 and 20 are calculated from the BDS data. Net job creation and job destruction for each age and size class, respectively, are equal to the sum for each class for businesses with fewer than 500 employees. Their share is the ratio of the sum for each class to total net job creation by businesses with fewer than 500 employees.

Figure 21

Figure 19 is calculated from the BDS data. Gross job creation and gross job creation in in 2012 are equal to the respective sums for each age class for businesses with fewer than 500 employees.

Table 1: Nonemployer Businesses as a Share of Total, Wisconsin Counties 2013

Nonemployer Businesses as a Share of Total		Nonemployer Businesses as a Share of Total	
County	Total	County	Total
Adams	76.38%	Marathon	70.09%
Ashland	68.54%	Marinette	67.72%
Barron	70.74%	Marquette	77.88%
Bayfield	77.88%	Menominee	80.74%
Brown	67.23%	Milwaukee	70.85%
Buffalo	76.56%	Monroe	72.36%
Burnett	74.17%	Oconto	74.47%
Calumet	72.87%	Oneida	68.96%
Chippewa	71.25%	Outagamie	65.92%
Clark	74.94%	Ozaukee	70.79%
Columbia	73.02%	Pepin	71.60%
Crawford	73.05%	Pierce	77.23%
Dane	72.34%	Polk	74.82%
Dodge	72.03%	Portage	69.31%
Door	68.02%	Price	72.49%
Douglas	67.47%	Racine	70.35%
Dunn	74.25%	Richland	76.39%
Eau Claire	68.30%	Rock	71.63%
Florence	76.48%	Rusk	75.78%
Fond Du Lac	67.28%	Sauk	74.43%
Forest	74.08%	Sawyer	70.82%
Grant	72.91%	Shawano	70.61%
Green	73.07%	Sheboygan	73.27%
Green Lake	73.13%	St. Croix	67.61%
Iowa	77.32%	Taylor	74.26%
Iron	69.41%	Trempealeau	75.02%
Jackson	72.80%	Vernon	79.83%
Jefferson	71.83%	Vilas	72.21%
Juneau	72.21%	Walworth	72.36%
Kenosha	73.25%	Washburn	73.21%
Kewaunee	73.08%	Washington	71.82%
La Crosse	67.27%	Waukesha	67.97%
Lafayette	78.36%	Waupaca	71.78%
Langlade	69.26%	Waushara	75.98%
Lincoln	72.32%	Winnebago	69.94%
Manitowoc	68.91%	Wood	68.75%

Table 2: Nonemployer Businesses as a Share of Total, U.S. States 2013

State	Rank	Nonemployer Businesses as a Share of Total	State	Rank	Nonemployer Businesses as a Share of Total
Alabama	9	76.20%	Montana	48	69.80%
Alaska	39	72.10%	Nebraska	42	70.80%
Arizona	11	76.00%	Nevada	10	76.10%
Arkansas	20	74.70%	New Hampshire	28	73.20%
California	6	77.30%	New Jersey	29	73.20%
Colorado	23	74.30%	New Mexico	30	73.20%
Connecticut	19	74.90%	New York	15	75.30%
Delaware	45	70.20%	North Carolina	14	75.70%
Florida	3	78.30%	North Dakota	50	68.30%
Georgia	1	79.00%	Ohio	18	74.90%
Hawaii	13	75.70%	Oklahoma	22	74.40%
Idaho	33	72.70%	Oregon	43	70.60%
Illinois	21	74.60%	Pennsylvania	37	72.30%
Indiana	31	73.10%	Rhode Island	35	72.50%
Iowa	40	71.70%	South Carolina	16	75.30%
Kansas	38	72.10%	South Dakota	44	70.60%
Kentucky	17	75.20%	Tennessee	4	78.20%
Louisiana	8	76.90%	Texas	2	78.80%
Maine	32	73.10%	Utah	25	73.70%
Maryland	7	77.10%	Vermont	24	73.80%
Massachusetts	26	73.70%	Virginia	27	73.40%
Michigan	12	76.00%	Washington	47	70.00%
Minnesota	34	72.70%	West Virginia	46	70.10%
Mississippi	5	77.60%	Wisconsin	41	70.80%
Missouri	36	72.40%	Wyoming	49	69.20%

Table 3: Share of Job Creation from Establishment Births, 2012

State	Rank	Share of Job Creation From Establishment Births	State	Rank	Share of Job Creation From Establishment Births
Alabama	33	29.10%	Montana	25	30.10%
Alaska	48	26.20%	Nebraska	37	28.50%
Arizona	5	33.80%	Nevada	2	35.00%
Arkansas	41	28.00%	New Hampshire	18	30.70%
California	17	30.80%	New Jersey	38	28.30%
Colorado	10	31.80%	New Mexico	9	32.00%
Connecticut	46	27.00%	New York	14	31.00%
Delaware	12	31.40%	North Carolina	13	31.20%
Florida	1	38.30%	North Dakota	6	33.30%
Georgia	4	33.90%	Ohio	40	28.00%
Hawaii	32	29.20%	Oklahoma	7	33.20%
Idaho	23	30.40%	Oregon	43	27.50%
Illinois	29	29.60%	Pennsylvania	20	30.50%
Indiana	16	30.90%	Rhode Island	44	27.40%
Iowa	35	28.60%	South Carolina	31	29.40%
Kansas	8	32.60%	South Dakota	21	30.50%
Kentucky	15	30.90%	Tennessee	19	30.60%
Louisiana	36	28.60%	Texas	3	34.00%
Maine	30	29.50%	Utah	11	31.60%
Maryland	26	29.90%	Vermont	22	30.40%
Massachusetts	45	27.20%	Virginia	34	28.70%
Michigan	39	28.00%	Washington	27	29.90%
Minnesota	49	25.70%	West Virginia	50	25.20%
Mississippi	28	29.80%	Wisconsin	47	26.90%
Missouri	24	30.30%	Wyoming	42	27.70%