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What is the economic impact of the slowdown in new business formation?

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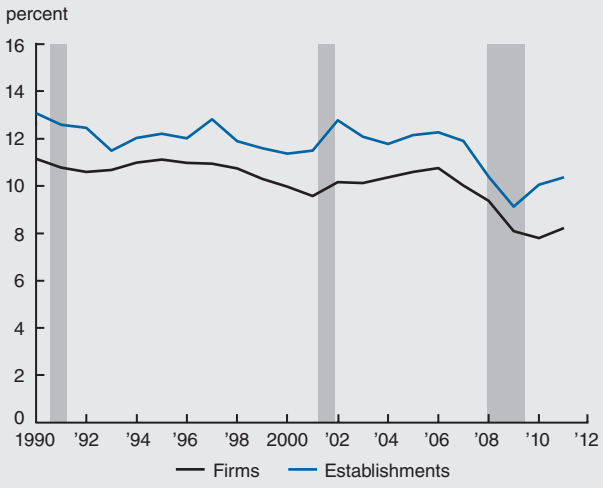
Economists have emphasized the importance of "creative destruction" as an engine of growth. The creative destruction process involves a constant reorganization of the economy as old products, firms, factories, and jobs are replaced by new ones. An important part of this process lies in the opening of new firms or establishments.[1]

Careful measurement reveals that the vast majority of productivity growth occurs as old establishments are replaced by new ones.[2] For this reason, new establishments and new firm openings are an important indicator—although less discussed than employment or gross domestic product (GDP)—of the fundamental health of an economy. Figure 1 depicts the entry rate of new firms and establishments, defined as newly created units as a percentage of existing units.[3] While this entry rate was fairly stable from 1990 until 2006, it started falling in 2007 and has remained at a low level since then. The decline is large: In 2006 there were about 562,000 new firms created, as opposed to about 390,000 in 2010 and 410,000 in 2011. This represents a decline of about 27% from the 2006 peak. Moreover, there is so far little tendency for business entry to recover.[4]

1. Entry rates of new firms and establishments



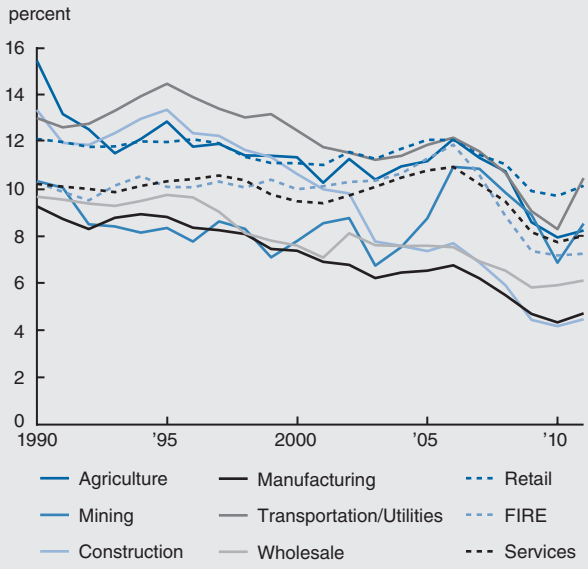
Source: U.S. Census Bureau, Business Dynamics Statistics data, available at www.census.gov/ces/dataproducts/bds/.

One might speculate that this decline in aggregate entry is driven by a few industries that were highly affected by the recession (such as new housing construction), or that it reflects compositional changes where some industries with higher entry rates (such as retail) represent a smaller share of the economy. However, figure 2, which calculates the entry rate for the broad sectors of the economy, shows that the decline of entry rates has affected all sectors since 2007, albeit some more than others.

The reasons behind this decline of new businesses formation remain largely unknown. There is some evidence suggesting that the tightening of credit prevented some potential entrepreneurs from starting up a new business.[5] Many entrepreneurs use credit cards or home equity borrowing to finance a start-up, and these sources of finance have been less available since 2006. Other potential explanations include the lower aggregate demand for market-produced goods and services, lower expectations of future growth, higher uncertainty, and changes in the tax and regulatory environments.[6]

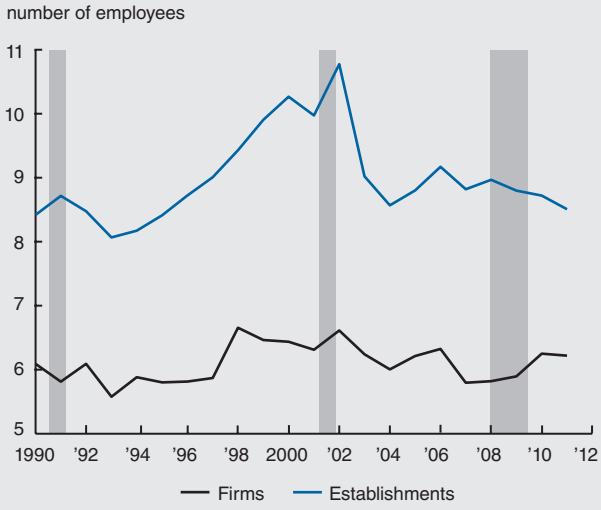
Whatever its cause, the decline of entry is likely to have reduced the demand for labor since 2007, perhaps by hindering productivity growth, and hence

2. Firm entry rates by industry



SOURCE: U.S. Census Bureau, Business Dynamics Statistics data, available at www.census.gov/ces/dataproducts/bds/.

3. Average size of new firm or establishment



SOURCE: U.S. Census Bureau, Business Dynamics Statistics data, available at www.census.gov/ces/dataproducts/bds/.

contributed to the size and especially the persistence of the economic contraction that started then. Next, we discuss the underlying theory before presenting some evidence of the economic impact of the slowdown in new business formation.

The "missing generation" theory

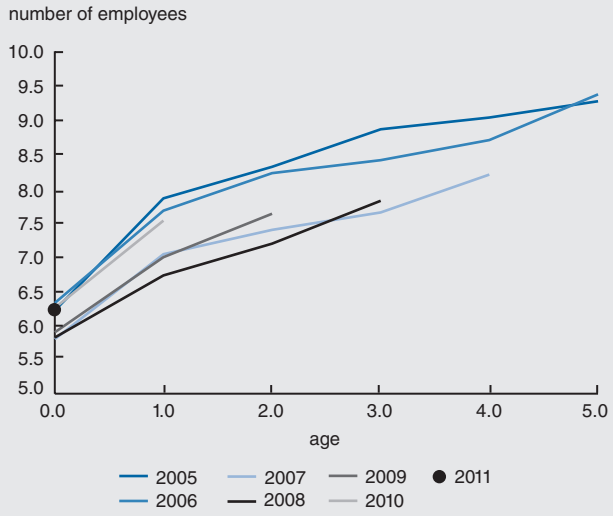
Recently, some researchers[7] have argued, largely on theoretical grounds, that declines in entry rates can contribute negatively to economic activity; in particular, they have argued that while the effect of a decline in entry might be fairly small initially, it could be very long lasting. At its core, the theoretical argument is that a temporary reduction of new business formation creates a "missing generation" effect: New firms that would have been created never appear. While many of these firms would have died young, a few would have grown over time and contributed to job creation. For instance, the 2009 cohort of new firms was small. This reduced employment in 2009. Going forward, based on the assumption that if more firms had been born in 2009, some of them would have died in 2010 but some would have survived and grown, we can identify a negative contribution to employment in 2010. And we can extrapolate this negative effect to subsequent years as well. Three observations are important about this process. First, the initial effect is small, because the vast majority of employment rests in "old" firms: New firms only account for about 3% of total U.S. employment. Second, the persistence of the missing generation depends on the difference between the death rate and the growth rate of the new firms as they age. In the data, this difference is fairly small, leading to a very strong persistence. Third, while this mechanism reduces the demand for labor by firms, the overall effect on employment will naturally also depend on labor supply by households.

A simple calculation

To provide an order of magnitude of the job losses created by the missing generation, we calculate the employment that would have occurred if, starting in 2006, the entry rate had stayed at its historical average (which we calculate over 1990–2006), assuming that the growth rates and death rates of all other firms behaved as they did in the data.[8] We can then compare this counterfactual employment with the actual employment to measure the contribution of firm entry to the decline in aggregate employment. Consistent with the basic argument outlined earlier, we find a small initial effect, so that entry accounts for little of the large decline of employment that took place in 2008 and 2009: For instance, while total private wage employment in March 2009 was 5.2 million lower than in March 2006 according to our data,[9] we estimate that only around 500,000 of these job losses are accounted for by reduced entry since 2006. However, the effect of lower entry builds up over time, both because the entry rate remains low and because of the intrinsic persistence (missing generation effect) discussed earlier. As of March 2011, we find that there would be 1.7 million more jobs had entry stayed at its historical average.

However, this simple calculation is merely an accounting exercise and may not reflect the full effect of lower entry. For instance, it is possible that lower entry benefits incumbents. In this case, our calculation would overestimate the job losses due to lower entry. Second, our calculation assumes that the firms that would have entered would have had the same growth and death probability as the firms that did enter. We explore this further in the next section. Finally, the 1990–2006 historical average might not be the right benchmark if, for instance, because of the aging U.S. population, a lower start-up rate would have occurred even in the absence of a recession.

4. Average firm size by age and cohort



SOURCE: U.S. Census Bureau, Business Dynamics Statistics data, available at www.census.gov/ces/dataproducts/bds/.

Objections to the missing generation theory

On top of these empirical issues, there are other reasons to question the validity of the missing generation theory. First, it is quite possible that firms that did not enter in 2008 will eventually enter once conditions recover, so that entry will overshoot its historical average. The analogy here is with a baby boom following a baby bust during a war. Potential entrepreneurs who had ideas for new businesses presumably do not forget them, though the conditions that make the ideas implementable may vanish. Figure 1 shows, however, that as of 2011 there was little hint of such a rebound, let alone an overshoot.

Second, one might think that the composition of entrants changed during the recession. This is potentially very important, given the wide variety of experiences for newborn firms. Many new firms die quickly or survive but do not grow much and, hence, do not contribute significantly to aggregate job creation; a small fraction of new entrants, however, grow extremely quickly and end up contributing importantly to aggregate job creation. These fast-growing firms are sometimes colorfully referred to as "gazelles." If the decline of entry is solely due to a reduction of entrants of the first type, the effect of lower entry on aggregate employment would be limited. Our calculation implicitly assumes that the reduction of entry affected both types of firms equally. To shed some light on this issue, we can assess the quality of the firms that did enter during the recession. A first simple measure of the quality of new entrants is the average size of new firms or establishments, which does not appear to have changed significantly since 2006, as shown in figure 3.

Another simple way to assess this question is to look at the realized growth experience of the firms that did enter. If these firms were indeed more likely to be gazelles, we should find that they experience fast growth, faster indeed than that of comparable firms that entered just before the recession. Figure 4 presents the average size of each firm by cohort and by age. Each line of this chart follows a particular cohort. For instance, the 2006 line depicts the average size of firms created in 2006, from their birth (age 0 in 2006) to their fifth anniversary (in 2011). The figure allows us to track the success of each cohort as it ages. Based on this rough measure, we find little evidence that the firms started in 2008–10 were of especially high quality.

Conclusion

What is driving the decline of business dynamism in the United States and what could potentially be done to offset it are important questions for researchers and policymakers. While the decline of new business entry rates starting in 2007 did not contribute much to the collapse of employment in 2008–09, its effects might be long lasting and contribute significantly to the slow employment recovery. While our simple calculation is merely an approximation, it reflects the empirical reality that employment in young firms (less than five years old) declined significantly more than that of older firms: The total number of employees working in firms less than five years old fell by 21% from 2007 to 2010, compared with 5% for firms older than five years. It will be important in the next few years to use business dynamics statistics to measure whether entry rates recover and how firms that did enter during the recession are doing.

[1] An establishment is defined by the U.S. Census Bureau as "a single physical location where business is conducted or where services or industrial operations are performed." We thank many colleagues, especially Jeff Campbell, Jason Faberman, John Roberts, and Mark Wright, for comments on preliminary drafts of this article.

[2] See, for instance, E. Bartelsman and P. Dhrymes, 1998, "Productivity dynamics: U.S. manufacturing plants, 1972–1986," *Journal of Productivity Analysis*, Vol. 9, No. 1, January, pp. 5–34.

[3] Calculations based on the U.S. Census Bureau's Business Dynamics Statistics data, available at www.census.gov/ces/dataproducts/bds/.

[4] The recent entry-rate decline is part of a broader secular decline in business dynamism that is visible across many economic statistics. See R. Decker, J. Haltiwanger,

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R. S. Jarmin, and J. Miranda, 2013, "The secular decline in business dynamism in the U.S.," working paper, May. Indeed, one possibility is that the declines seen since 2008 will never be reversed as the trend settles at lower levels.

[5] According to A. Robb and E. J. Reedy, 2011, "An overview of the Kauffman firm survey: Results from 2009 business activities," Ewing Marion Kauffman Foundation, research report, March, the fraction of young firms in the Kauffman survey that saw their credit applications always denied increased by 50% from 2008 to 2009.

[6] Recent works studying the employment decline in young firms include M. Siemer, 2012, "Firm entry and employment dynamics in the Great Recession," working paper, October; T. Fort, J. Haltiwanger, R. S. Jarmin, and J. Miranda, 2013, "How firms respond to business cycles: The role of firm age and firm size," *IMF Economic Review*, Vol. 61, No. 3, August, pp. 520–559; M. C. Schmalz, D. A. Sraer, and D. Thesmar, 2013, "Housing collateral and entrepreneurship," National Bureau of Economic Research, working paper, No 19680, November; and M. Adelino, A. Schoar, and F. Severino, 2014, "House prices, collateral and self-employment," *Journal of Financial Economics*, forthcoming.

[7] These include G. Clementi and B. Palazzo, 2013, "Entry, exit, firm dynamics, and aggregate fluctuations," National Bureau of Economic Research, working paper, No. 19217, July; E. Luttmer, 2013, "The Stolper–Samuelson effects of a decline in aggregate consumption," Federal Reserve Bank of Minneapolis, working paper, No. 703, February; and Siemer (2012).

[8] Under this scenario, we can work out how many firms of each age (0, 1, 2, …) would have been alive in each following year 2007, 2008, etc. Then we obtain aggregate employment by summing the employment of firms of all ages in a given year. There are some technical issues to infer growth and death rates from the census data; details are available from the authors upon request.

[9] The decline of private wage employment is somewhat smaller according to other data sources—4.2 million in the U.S. Bureau of Labor Statistics' *Current Establishment Survey* and 3.1 million in the U.S. Bureau of Labor Statistics and U.S. Census Bureau's *Current Population Survey*.