

Top Ten Signs of Declining Business Dynamism and Entrepreneurship in the U.S.*

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The U.S. has exhibited a substantial and pervasive decline in measures of business dynamism, entrepreneurship and labor market fluidity in the last several decades. We have learned this through the relatively recent development of comprehensive longitudinal business databases tracking the private, non-farm sector of the U.S. Numerous studies have documented the decline and explored its causes and consequences.¹ In this short synopsis, the basic facts of this decline are summarized by highlighting the top ten signs of the decline.

Before discussing the top ten facts, it is useful to provide some brief remarks about whether these trends have adverse consequences for U.S. economic growth. A hallmark of the U.S. economy has been a high pace of job and worker reallocation with a high pace of business entry and exit. The evidence shows that this dynamism and flexibility of the U.S. labor market has been important for productivity growth, earnings growth and job creation. The reallocation of jobs across businesses historically has reflected moving resources from less productive to more productive businesses. The churning of workers across jobs has reflected workers moving up the job ladder finding better matches. Better matches yield both higher productivity and higher wages. Startups and high growth young firms have been a critical component of this dynamism. Startups and young firms have disproportionately contributed to job creation and been key sources of innovation and experimentation. From this perspective, the declines in dynamism and fluidity would appear to have adverse consequences. However, it could be that shifts in the business model and changes in the way that workers build careers imply that job creation, productivity and earnings growth can be achieved without such a high pace of worker and job reallocation. These alternate views are at the core of the open question about the impact of the declining trends in dynamism and fluidity. Further discussion of the ramifications of the

¹ See e.g. Davis, Haltiwanger, Jarmin and Miranda (2007); Hyatt and Spletzer (2013); Decker, Haltiwanger, Jarmin and Miranda (2014a, 2014b, 2015).

declining dynamism is provided in the concluding remarks but first the core facts are stated and discussed.

Fact 1: The decline in business dynamism accelerated in the post-2000 period.

Using measures such as the pace of job reallocation, the dispersion of growth rates across businesses and within business volatility, the decline in business dynamism for the U.S. private non-farm sector dates at least to the mid-1980s (see Davis, Haltiwanger, Jarmin and Miranda (2007), Davis and Haltiwanger (2014), Decker, Haltiwanger, Jarmin and Miranda (2014a,b)). Figure 1a shows the annual pace of job reallocation from the Business Dynamic Statistics (BDS) for the U.S. private non-farm sector from 1980-2012. Figure 1b shows the quarterly pace of job reallocation from the Business Employment Dynamics (BED). In each figure, the actual and trend (Hodrick-Prescott Filtered) series are depicted. The trend decline is apparent as is a notable acceleration in the decline in trend in the post-2000 period. The acceleration of the decline in the trend is associated with change in the character in the decline in the post-2000 period as discussed in the next fact.

Fact 2: The decline in business dynamism has seen a shift in the industries and types of firms impacted.

Prior to 2000, the decline in indicators of business dynamism were dominated by sectors such as retail trade and services. In the retail trade sector, the decline in entrepreneurship and dynamism has arguably been driven by benign factors reflecting a shift in the business model in retail trade. The shift has been away from single unit establishment firms (“Mom and Pop” firms) to large national and multi-national chains. The latter have taken advantage of IT and

globalization to build efficient distribution and supply chain networks. Establishments in retail trade that are part of large, national firms are both more productive and more stable.²

In contrast, prior to 2000 key sectors like high tech as well as publicly traded firms exhibited a rise in indicators of dynamism.³ The evidence shows that in high tech, high growth young firms play an especially critical role in job creation and productivity growth. Likewise, newly listed publicly traded firms (IPOs) are high growth young firms critical for job creation and productivity growth. In the robust period of aggregate productivity and job growth in the 1990s, the high tech sector and newly listed public companies (there is considerable overlap here) exhibited increases in indicators in dynamism and entrepreneurship. However, since 2000 the high tech sector and publicly traded firms have exhibited a decline in dynamism. The number of IPOs has fallen in the post-2000 period and those that have entered have not exhibited the same rapid growth as earlier cohorts.

Fact 3: The decline in dynamism has been attenuated by the changing composition of U.S. industries.

The shift away from goods producing industries in the U.S. should have implied an increase in measures of business dynamism. Sectors such as retail trade and services have higher average rates of dynamism than the manufacturing sector even taking into account the especially large declines in dynamism in retail trade and services discussed in Fact 2.⁴ This implies that the puzzle of declining dynamism is even larger once one controls for industry composition. That is,

² See Foster et. al. (2006) and Jarmin et. al. (2009) for further discussion.

³ See Comin and Philippon (2003), Davis, Haltiwanger, Jarmin and Miranda (2006), Haltiwanger, Hathaway and Miranda (2014), Decker, Haltiwanger, Jarmin and Miranda (2015).

⁴ But an interesting feature of the within industry declines is that they have been larger for the sectors with the larger initial levels. This implies there has been convergence in reallocation rates across sectors.

the within industry decline is even larger than the overall decline. As discussed in Fact 2, the patterns of within industry declines in dynamism vary substantially over time.

Fact 4: The decline in dynamism encompasses a decline in the startup rate.

Figure 2a shows the startup rate of firms along with the exit rate of firms from the BDS. These startup and exit rates abstract from M&A activity and reflect organic entry and exit.⁵ The decline in the startup rate has been ongoing for the last few decades although consistent with fact 2 its character has changed over time. Prior to 2000, the decline in the startup rate was dominated by sectors like retail trade. Since 2000 there has been a sharp decline in the startup rate in key innovative sectors like high tech. The decline has been substantial enough that the net entry rate has turned negative in the last several years.

Figure 2b shows the employment weighted startup rate over the same period (from the BDS) which shows the same general patterns. The employment weighted startup rate declined from 2006 to 2009 by 1 percentage points which implies more than 1 million fewer jobs created by startups in 2009 compared to 2006. Figure 2b also shows the employment weighted establishment annual openings rate from the BDS from 1981 to 2012 and the analogous series from the BED from 1992 to 2015. All series are on a March-to-March basis with the BED series depicted representing four times the average of the quarterly openings rate for the relevant quarters of the year.⁶ Interestingly, the BDS and the BED series in the overlapping years show quite similar rates in terms of magnitudes and trends. The *establishment* openings rate is about twice that of *firm* startup rate reflecting the fact that many new establishments are for existing

⁵ See Haltiwanger, Jarmin and Miranda (2013) and Decker, Haltiwanger, Jarmin and Miranda (2014a, 2015).

⁶ There may be time aggregation issues with some establishments opening and closing within the March to March period captured in the BED but not included in the BDS. Building on the approach of using four times the average quarterly rates for the year, the preliminary estimate for 2015 is four times the average of the 2nd and 3rd quarter rates. This estimate should be used with appropriate caution.

firms. Indeed, Haltiwanger, Jarmin and Miranda (2013) show that most new establishments of existing firms are for large, older firms. This implies appropriate caution must be used in drawing inferences from the establishment openings series. Still for both the BDS and the BED the downward trend in the establishment openings series largely mimics the downward trend in the startup rate series. This is important since it provides a proxy for the likely pattern of the startup rate series through 2015. With these reservations in mind, it is striking that the establishment openings rate exhibits a continued downward trend through this period.

The decline in these indicators of entrepreneurship is a core component of the overall decline in dynamism discussed in Fact 1. Young businesses are the most volatile businesses so a decline in startups implies a decline in the share of activity accounted for by young businesses. Decker, Haltiwanger, Jarmin and Miranda (2014) show that this shift away from young firms accounts for about 30 percent of the decline in dynamism.

Figures 2a and 2b also show a sharp decline in startup activity in the Great Recession with little or no recovery. For the startup rate itself we observe this only through 2012 but the weak pattern for establishment openings through 2015 suggests a continued weak recovery of startups. One way to see that the recovery for young and small businesses has been especially anemic is to compare the recovery in employment for young and small businesses from the Great Recession to the early 1980s recession. Figure 3 shows that it is especially young (<5 years old) and small/medium (<500+) businesses that have experienced a weak recovery.

Fact 5: The typical worker is increasingly more likely to work at a large, mature, national (or global) firm.

Figure 4 shows the share of employment at large (500+), mature (5 years plus) firms, small/medium (<500), mature firms and small/medium, young (<5 years old) firms. The share of

employment for the latter has dropped in half over the last several decades while the share of employment at large, mature firms has risen from about 40 to 50 percent of employment. Large, mature firms account for less than 1 percent of total firms (see Haltiwanger, Jarmin and Miranda (2013)) but obviously a very large and increasing fraction of activity. Decker, Haltiwanger, Jarmin and Miranda (2014, 2015) show that this shift to large, mature firms is also accompanied by a shift towards national firms (with activity in all regions of the country). The shift in the age and size structure of firms is directly related to the decline in startups documented in Fact 4.

Fact 6: Worker reallocation and worker churn has declined.

Worker reallocation is about twice the pace of job reallocation. Put differently, hires are about twice the pace of job creation and separations (mostly quits plus layoffs) are about twice the pace of job destruction (see Davis and Haltiwanger (2014)). Figure 5 shows the pace of worker reallocation, job reallocation and worker churn (the difference between worker and job reallocation). Worker churn is the amount of worker reallocation over and above that needed to accommodate the shifting of jobs across establishments.⁷

Worker churn was actually rising over the 1990s but then fell in the post-2000 period. Given the decline in job reallocation through the entire period that accelerated in the post-2000 period, worker reallocation fell sharply in the post-2000 period.

Fact 7: The decline in labor market fluidity has induced a decline in the employment to population ratio.

States and demographic groups with the largest declines in labor market fluidity also experienced the largest declines in employment to population ratios (see Davis and Haltiwanger (2014)). Specifically, young, less educated males experienced the largest declines in both labor

⁷ Figure 5 is an extended version of the series developed in Davis, Faberman and Haltiwanger (2012).

market fluidity and employment to population ratios. Economic theory suggests this relationship may be causal. A fluid labor market is especially important for young workers as they try to build a career. A fluid labor market implies a high likelihood of finding a job upon entry to the labor market and an ability to job hop to find the best match. For marginally attached young workers, a decline in fluidity makes participating in the labor market less attractive. Using instrumental variable estimation procedures Davis and Haltiwanger (2014) find empirical support for this labor fluidity hypothesis.

Fact 8: The recent recovery in net job creation is driven more by the continuing decline in job destruction and layoffs than an increase in job creation and hiring.

The U.S. has had a sustained albeit slow recovery from the Great Recession with 20 quarters of consecutive positive net employment growth since the first quarter of 2010. Figures 6a and 6b show that the recovery is driven more by a decline in job destruction and layoffs than a recovery in job creation and hires. The latter remain substantially below the 2006 levels and far below the robust rates in the late 1990s. Hires and quits have picked up in the fourth quarter of 2014 and first quarter of 2015. This looks to be an increase in worker churn and not an increase in job reallocation (we will not know for sure until the BED data for those quarters are released). Worker churn by construction does not contribute to net job creation.

Fact 9: The decline in dynamism is not due to a decline in the volatility of shocks but rather the *responsiveness* to those shocks.

One possible potentially benign explanation of the decline in dynamism is that the structure of the U.S. economy and the business model has changed so that there is less need for so much dynamism. According to economic theory, a high pace of dynamism is part of a healthy economy if that dynamism reflects moving resources away from less productive to more

productive uses. If the dispersion of productivity differences decreased between firms then this would be one indicator of change in structure implying less need for reallocation. Evidence from the manufacturing sector shows a *rise* in the dispersion of TFP differences between plants (see Decker, Haltiwanger, Jarmin and Miranda (2014b)). This holds overall in manufacturing but also in the critical high tech components of manufacturing (e.g., computers and semi-conductors). This rise in dispersion in TFP is consistent with a rising dispersion in the volatility of idiosyncratic productivity shocks impacting businesses. This implies that there should be a rise in dynamism as there are increased incentives for reallocation. To reconcile the decline in dynamism with a rise in firm level volatility of shocks, Decker, Haltiwanger, Jarmin and Miranda (2014b) show there has been a decline in the *responsiveness* of manufacturing plants in terms of growth and survival to TFP shocks.

Fact 10: The declining responsiveness to idiosyncratic productivity shocks implies the contribution of reallocation to productivity growth has declined.

High productivity firms expand while low productivity firms contract and exit; thus reallocation contributes to productivity growth. This finding is one of the most ubiquitous findings in the firm dynamics literature (Syverson (2011)). Fact 9 implies that the contribution of reallocation to aggregate productivity growth has declined. A counterfactual exercise by Decker, Haltiwanger, Jarmin and Miranda (2014b) suggests that the difference in the annual contribution of reallocation to productivity growth between the 1980s and the post 2000 period is about 1 percentage point. This is a large quantitative effect.

Concluding Remarks and Discussion

The ten facts presented above establish that something has changed in the dynamics of U.S. businesses and workers. U.S. policymakers in the 1990s highlighted the dynamism of U.S. businesses and the flexibility of U.S. labor markets as underlying the robust economic growth

over that period. Such claims cannot be made for the post-2000 period and especially in the post Great Recession recovery. The factors that underlie these fundamental structural changes to the U.S. economy are not yet understood. In some sectors like retail trade a case can be made that the declining dynamism has largely been benign, reflecting a shift in the business model to large, national chains that are both more productive and more stable. However, in other sectors such as high tech, such arguments are less persuasive. In this respect, it is worth noting that the acceleration in the decline in dynamism and the decline in dynamism in key innovative sectors like high tech in the post-2000 period coincides with a decline in U.S. economic growth whether measured by productivity or job growth.

Economic theory implies that one possible explanation is increased barriers to adjustment for firms and workers. In practice, it is not apparent that there was a single major change in the U.S. business climate over this period that increased adjustment frictions. It may be that this is more like “a death by a thousand cuts” with many small changes in the regulatory and institutional environment contributing to the decline in dynamism and flexibility. Davis and Haltiwanger (2014) show that the decline in the employment-at-will doctrine contributes non-trivially to the decline in business dynamism. Likewise they speculate that the rapid increase in occupational licensing requirements may be an important factor. Hsieh and Moretti (2015) have argued that in the idea economy it is even more important than ever for clustering of economic activity to occur and they argue that zoning and other restrictions on local economic growth may be stifling U.S. economic growth. In this case, it may not be so much a change in the regulatory environment but a change in the impact of existing regulations as the economy has changed structure.

Related concerns relate to the combined influence of IT and globalization. IT facilitates global linkages in the production process within and across firms. It may be that the U.S. has become relatively less attractive for the type of dynamic, entrepreneurial activity that has been its hallmark. Some have speculated that the U.S. is still the place to develop and design new products and processes but it is relatively less attractive as the place to produce such new products.⁸ In considering these issues, this is not an argument against globalization since this brings greater economic efficiency and considerable gains to consumers. Likewise further innovations in IT will raise productivity and yield gains to consumers. But it may be that the U.S. is less well positioned to deal with the inevitable disruptions that occur when there are structural changes such as IT and globalization.

Another possible explanation is that there has been a shift in the willingness to take on the risks that are inherent in a highly entrepreneurial economy. Such a shift may come from several sources. Potential entrepreneurs may be less willing to undertake the risky process of starting a new business. Credit markets may have become less willing to finance risky startups and young firms. Why might there be less willingness to take on risk? One difficult to assess hypothesis is that more recent generations are more risk averse. Perhaps more easy to assess is the hypothesis that something in the economic environment has changed that makes taking on risk less attractive. A plausible candidate hypothesis here is the rise in various indicators of economic and policy uncertainty that have been documented in by Baker, Bloom, Canes-Wrone, Davis and Rodden (2014).

⁸ See, for example, the remarks of Laura Tyson at the Hamilton Project Event on the “The Future of Work in the Age of the Machine” February 2015.

Much of this discussion is speculative. Figuring out what has driven these fundamental changes in these indicators of dynamism and fluidity and in turn exploring the consequences of these changes for U.S. economic growth should be a high priority.

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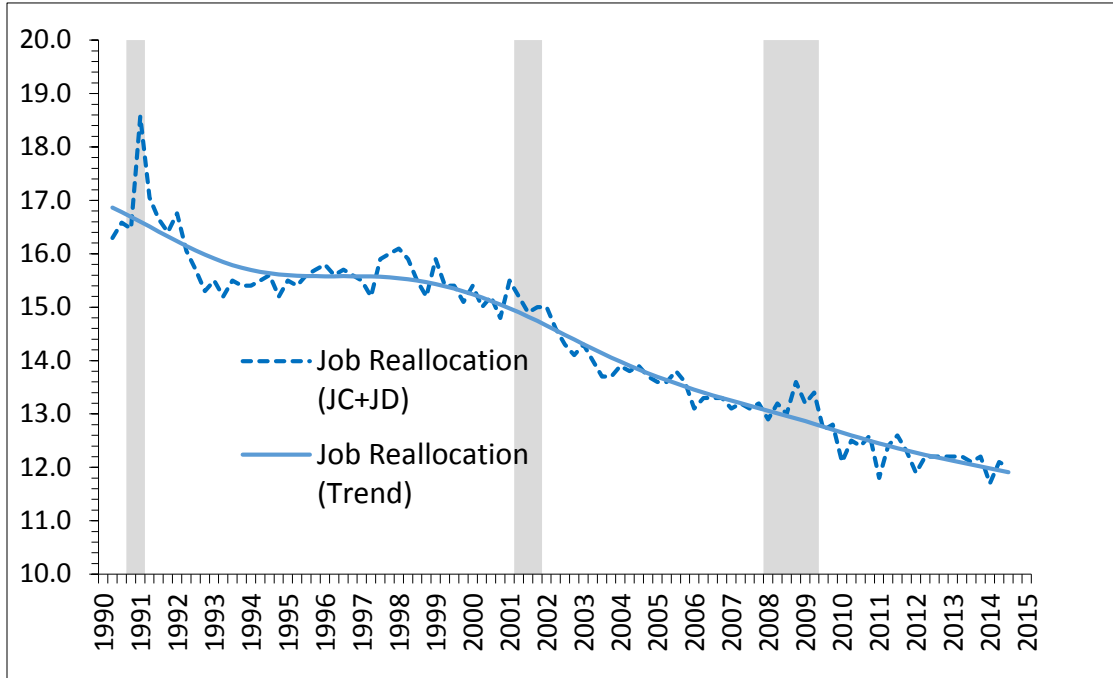
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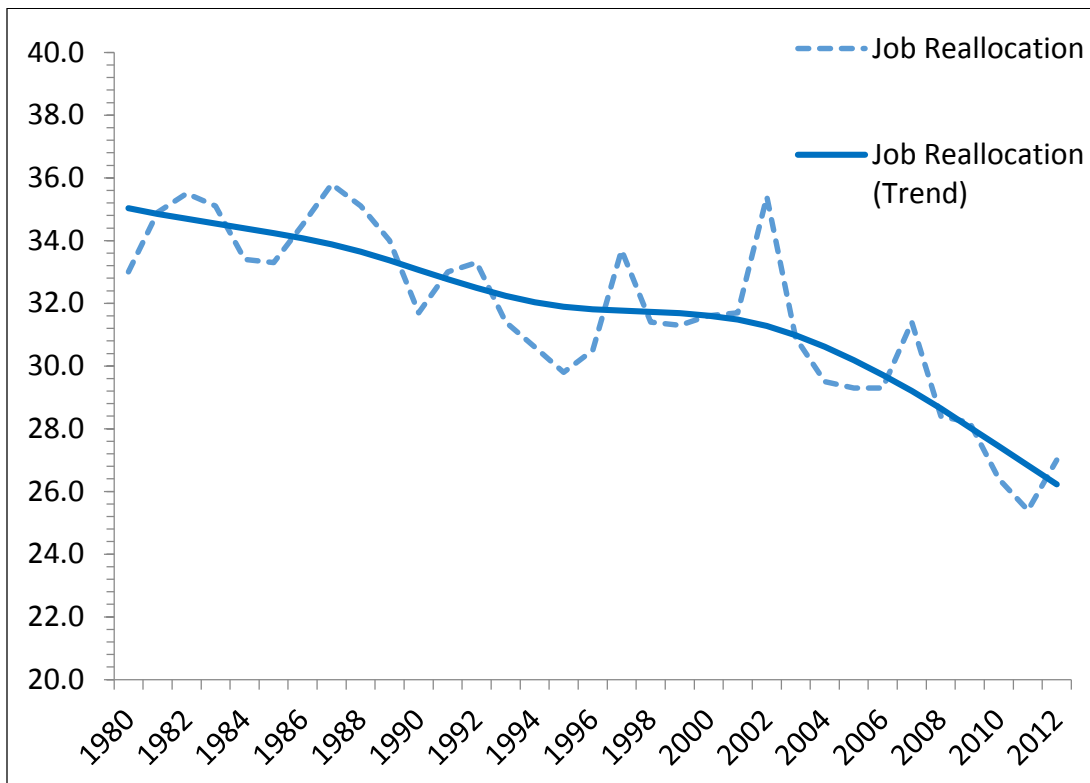
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Figure 1a: Job Reallocation Rate, U.S. Private Non-Farm, Quarterly 1990:2-2014:3



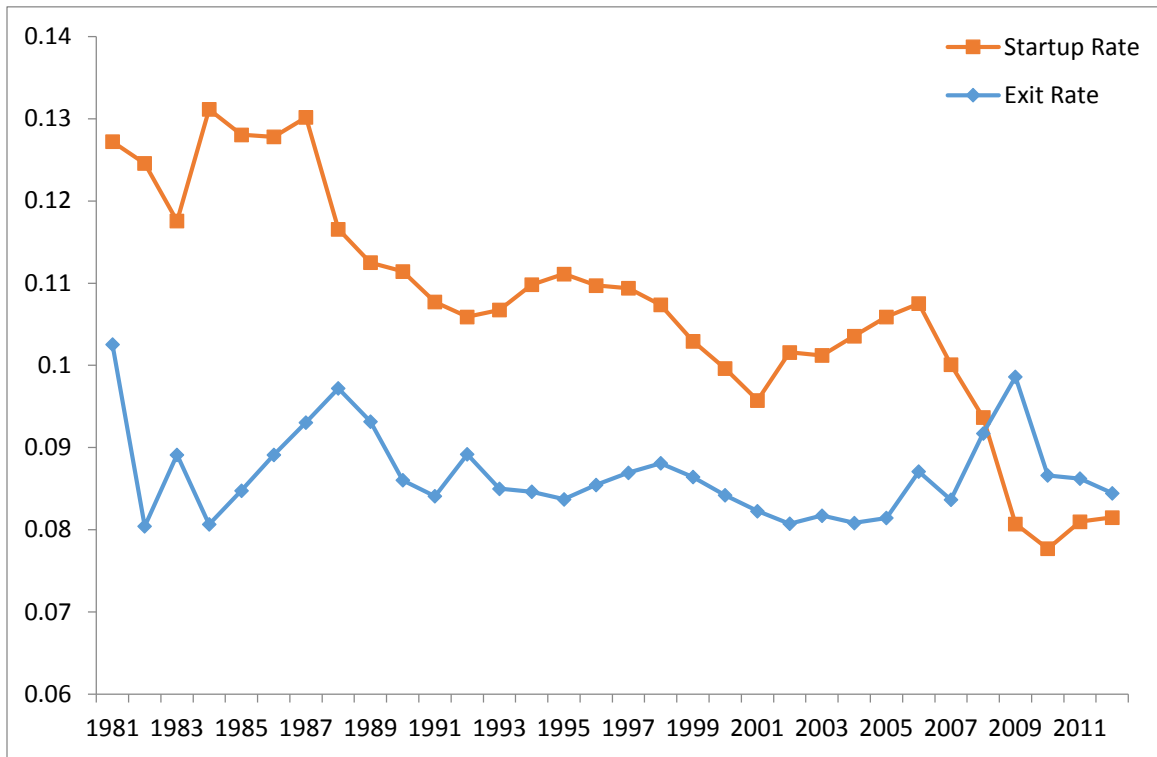
Source: BED

Figure 1b: Job Reallocation Rate, U.S. Private Non-Farm, Annual 1980-2012



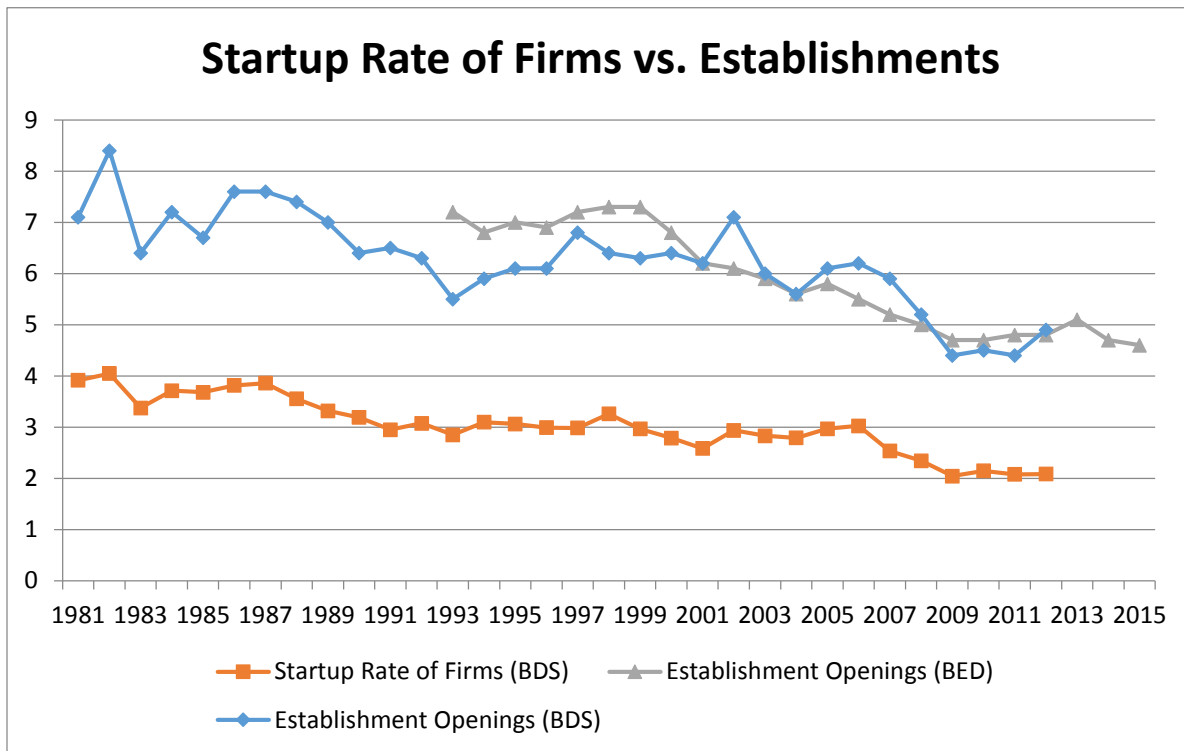
Source: BDS

Figure 2a: Startup and Exit Rates for Firms in the U.S. Non-Farm Sector, 1981-2012



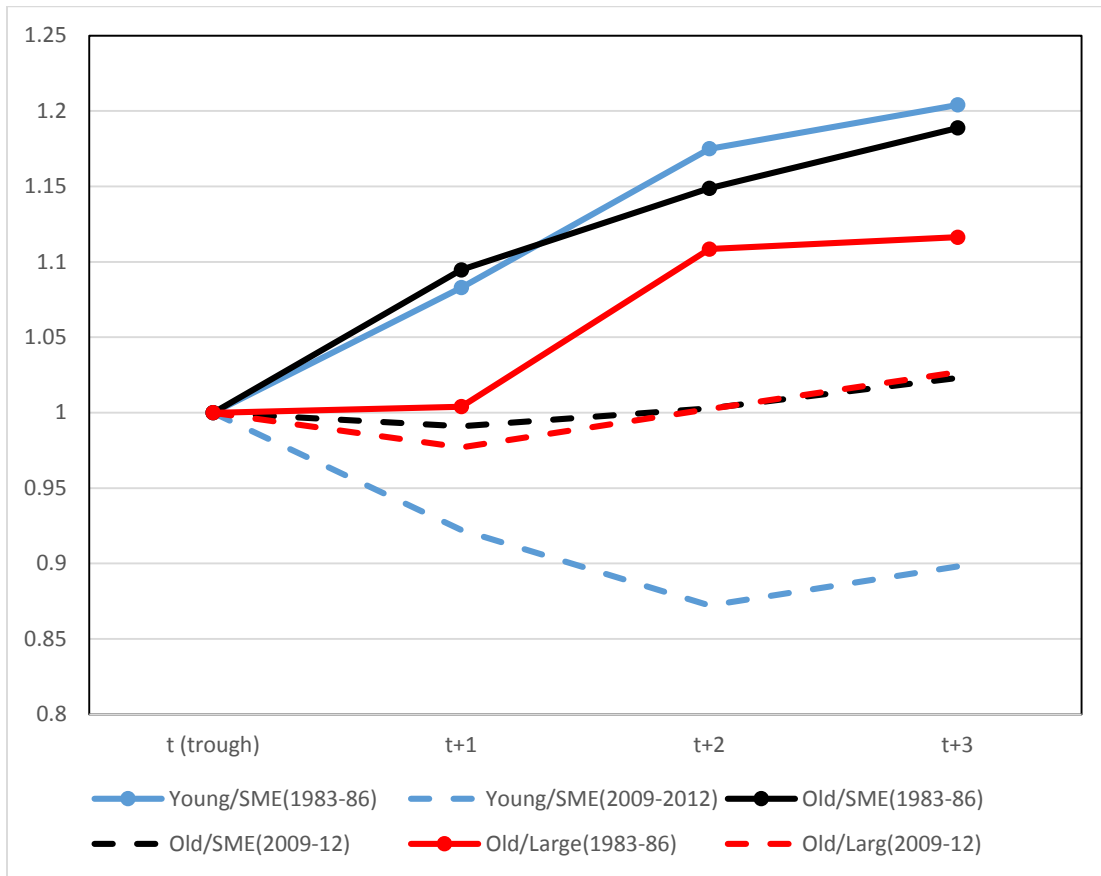
Source: BDS

Figure 2b: Annual Employment Weighted Startup Rate of Firms and Establishments, U.S. Private Non-Farm Sector, BDS (1981-2012), BED (1992-2015).



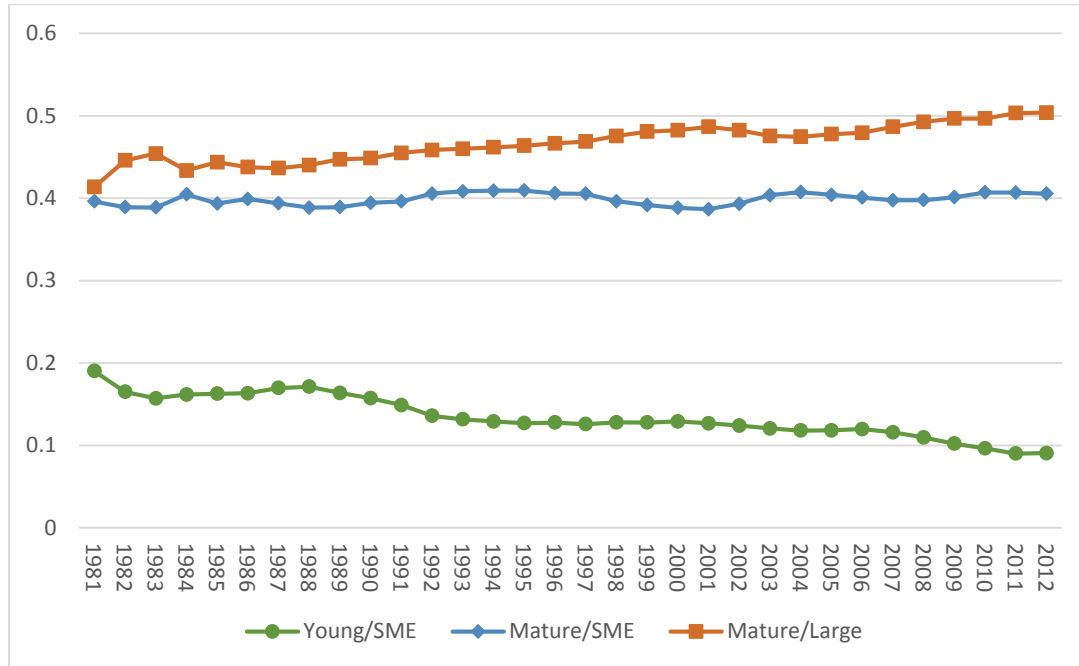
Source: BDS and BED

Figure 3: Employment Relative to Trough, by Firm Size and Firm Age



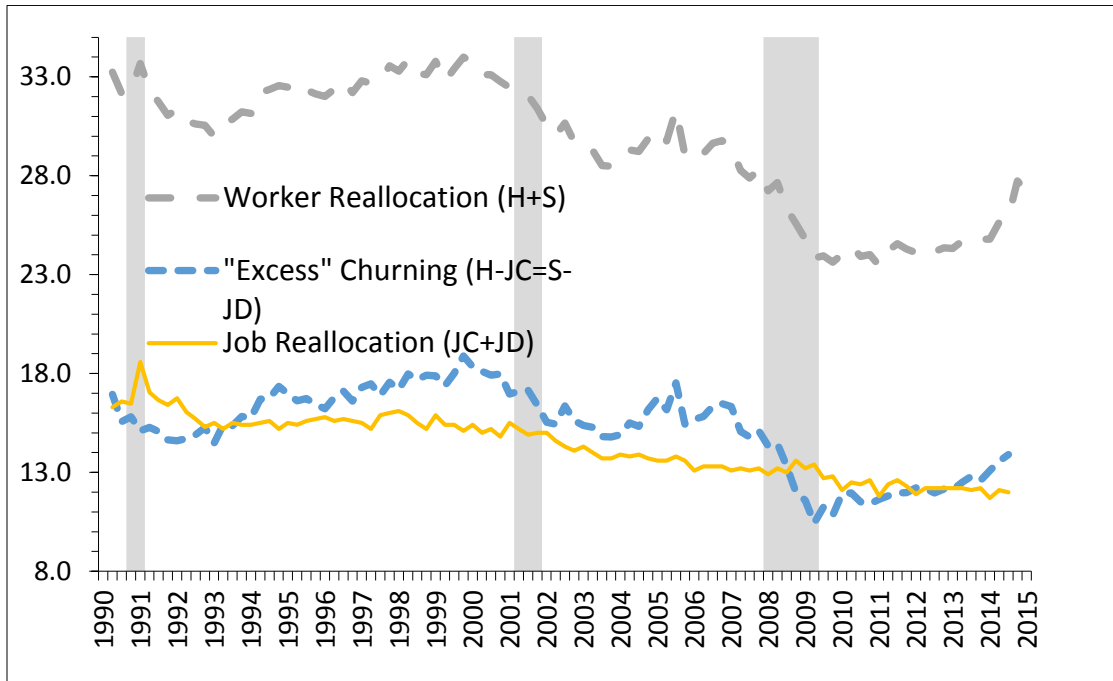
Source: BDS. This figure draws on the analysis in Davis and Haltiwanger (2015).

Figure 4: Share of Employment by Broad Firm Age and Firm Size Classes, U.S. Non-Farm, 1981-2012



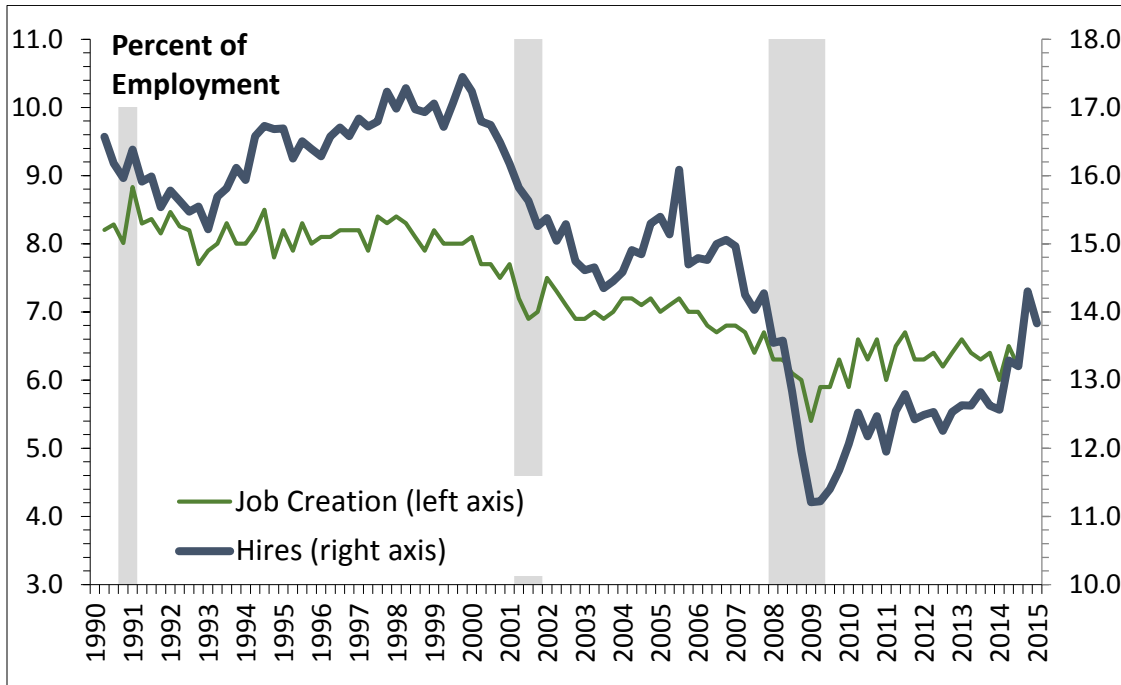
Source: BDS

Figure 5: Worker Reallocation, Job Reallocation and Churn, U.S. Private Sector, 1990:2-2015:1



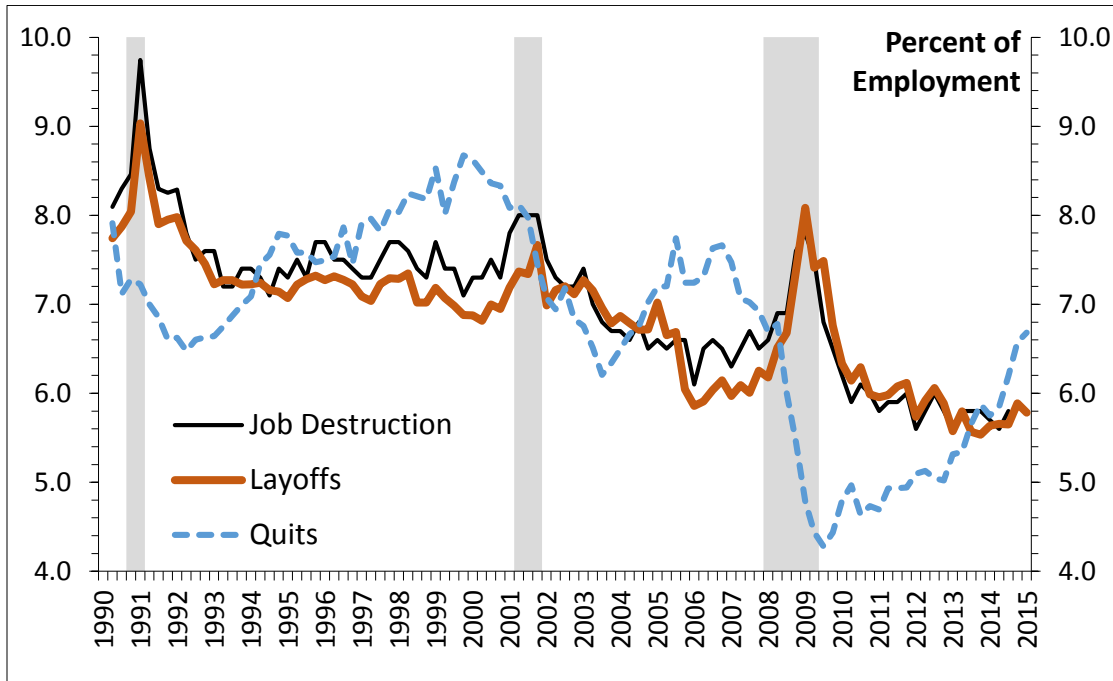
Source: BED and JOLTS. This uses an extended version of the series developed by Davis, Faberman and Haltiwanger (2012). This figure is an extended version of a figure in Davis and Haltiwanger (2014). The worker reallocation series extends to 2015:1. The job reallocation and churn series stops in 2014:3 which is the most recent quarter of the BED.

Figure 6a: Hires and Job Creation for U.S. private non-farm, quarterly, 1990:2-2015:1



Source: BED and JOLTS. This uses an extended version of the series developed by Davis, Faberman and Haltiwanger (2012). This figure is an extended version of a figure in Davis and Haltiwanger (2014). The hires series extends to 2015:1. The job creation series stops in 2014:3.

Figure 6b: Layoffs, Quits and Job Destruction for U.S. private non-farm, quarterly, 1990:2-2015:1



Source: BED and JOLTS. This uses an extended version of the series developed by Davis, Faberman and Haltiwanger (2012). This figure is an extended version of a figure in Davis and Haltiwanger (2014). The layoffs and quits series extend to 2015:1. The job destruction series stops in 2014:3.