Private Sector Dynamics: The Key to Understanding U.S. Growth

Recently there has been considerable attention centered on *startups*, that these newly-formed establishments are the linchpin of job creation and should be the focus of economic development policy.[1] Yet this is a serious misperception—one that is largely fueled by looking at the *net* change in job numbers rather understanding the underlying dynamics of how jobs are created, sustained and lost. When it comes to greatest return on investment, it is existing, expanding companies that are the real engines of economic growth.

In this monograph, we utilize the *2009 National Establishment Time-Series (NETS) Database* to more carefully address the issue of *who contributes to U.S. growth*. The *NETS Database* is a unique establishment-based database made up of over 41 million business, government and non-profit entities operating in the U.S. between 1989 and 2009.[2] Unlike Census tabulations, with the *NETS Database*, we can follow individual private-sector businesses over time; and address important issues like *how* jobs are created; in *what* industries and regions; whether the sources of growth *differ* in good and bad times; and how long do new jobs *survive*?

Exploring the Components of Job Growth

As Figure 1 (next page) indicates, over the period 1990 to 2008, an average 13.55 million private sector jobs were created and another 11.6 million were destroyed *annually*. The average net effect was slightly less than 2 million net new jobs added to the U.S. economy each year; and, *for each one, nearly 13 jobs were either created or destroyed*. It should be noted here that job destruction is not necessarily a bad thing. In many cases, adaptation to new technologies requires business to eliminate some jobs in order to add new ones that are more consistent with today's competitive pressures. However, to completely reap the benefits of competing in the global marketplace, we must—on average—create *more* jobs than we destroy.

It is also obvious from Figure 1 (next page) that the U.S. economy has been more successful in some periods than others at creating more jobs than it destroyed. In fact, in the *ten best years* between 1990

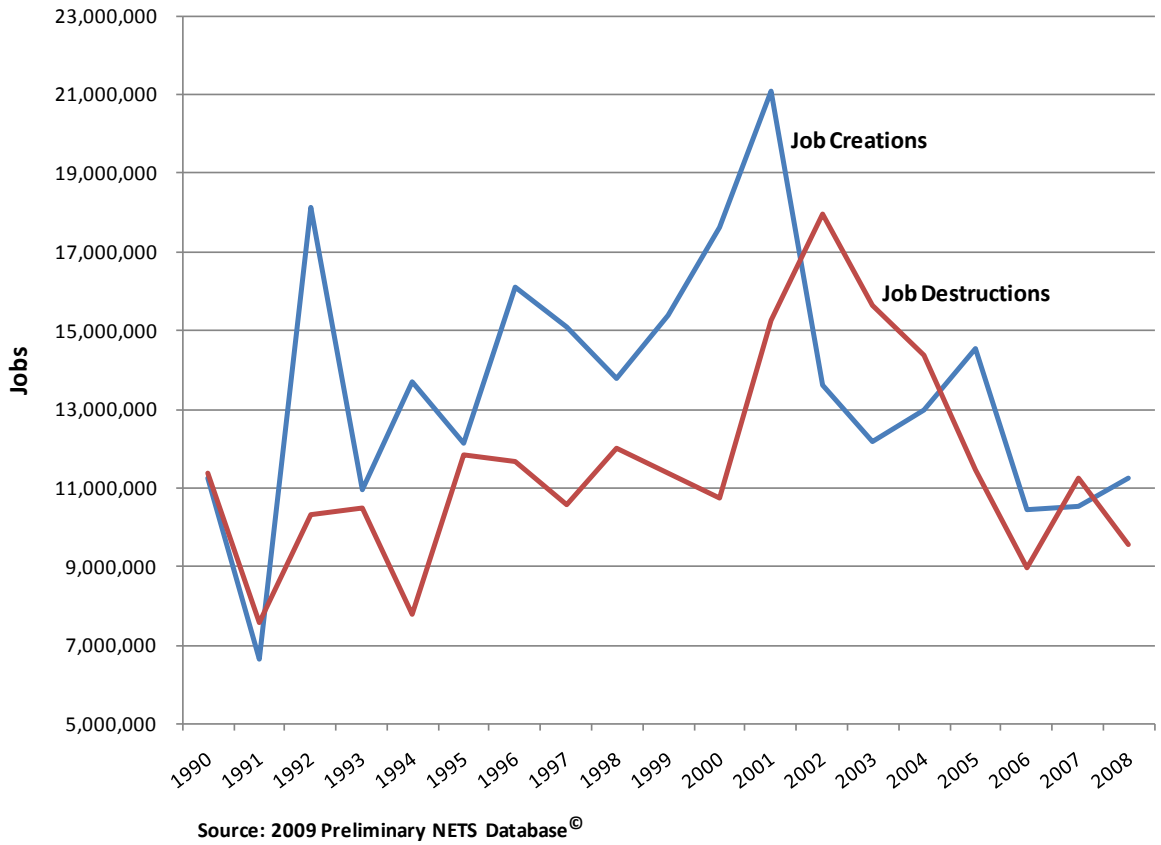
[1] See, for instance Startup America Partnership (http://www.startupamericapartnership.org/) or a discussion of recent research in Christine Hamilton-Pennell's blog on "The Role of Startups in Job Creation and Destruction" (see http://supportinglocalentrepreneurship.wordpress.com/2010/10/21/the-role-of-start-ups-in-job-creation-and-destruction/).

[2] The NETS Database is constructed from 21 "snapshots" taken every January since 1990 of all active Dun and Bradstreet establishments. That data is then put through rigorous quality control, statistical analysis, and additional estimation procedures to create the resulting *time-series* in the NETS Database.

and 2008[3], creations outpaced destructions by nearly 4.6 million per year and the ratio of total job creations and destructions to net jobs created over that period was 5.8 to 1. But in the *nine worst years* (dominated by the post-9/11 economy), destructions outpaced creations by nearly 1 million jobs annually and the ratio of total job creations and destructions to net jobs was 24.1 to 1. This latter indicator suggests just how difficult it was for the economy to grow in those years (i.e., the higher the ratio, the tougher the global competition).

Figure 1

Total U.S. Job Creations & Destruction, 1990-2008



Source: 2009 Preliminary NETS Database©

What is the mechanism by which jobs are created or destroyed in the U.S. economy? There are four main categories of establishment behavior that explain this dynamic: establishment *births* and *expansions* create jobs and establishment *deaths* and *contractions* destroy jobs.[4]

[3] The *best* performing years were 1992, 1994, 1996-2001, 2005 and 2008; while the *worst* were 1990-91, 1993, 1995, 2002-04 and 2006-07.

[4] Since the NETS Database is an annual time-series database, it is possible for the same establishment to both create and destroy jobs within the year (e.g., 1st quarter vs. 3rd quarter). We will only capture the net of multiple job creations/destructions during any year. So, to that extent, net annual creations actually under-represent the true job market dynamic.

As Table 1 indicates, there are two types of establishment *births*: new business startups and new establishments of existing businesses. In "good times", on average, 30% more establishments are "born" with 60% more new jobs than in "bad times". In both periods, however, approximately 3 out of every 5 jobs created in new establishments ("births") are new startup businesses. The average size of a startup is approximately 3 employees (including the owner); while new establishments of existing firms tend to be larger (on average, greater than 26 employees). This explains why, while over 90% of establishment *births* are startups, only 61-65% of the new jobs created in the *Births* category are in new business startups.

Table 1

The Components of Growth in a Dynamic Economy: "Net" Change Results from Significant Upheaval in the Underlying Economy (Annual Averages, 1990-2008)

	Stronger Years[1]			Weaker Years		
	Estabs	Jobs	Avg Size	Estabs	Jobs	Avg Size
Net Change	897,917	4,589,933	5.1	564,744	(969,679)	1.7
Births[2]	1,875,279	9,758,812	5.2	1,439,887	6,067,289	4.2
- Startups	1,730,659	5,963,811	3.4	1,361,242	3,915,260	2.9
- Existing Expansions	144,620	3,795,001	26.2	78,645	2,152,029	27.4
Expansions	605,200	5,912,760	9.8	522,679	5,132,838	9.8
Deaths	977,362	(7,161,850)	7.3	875,143	(7,328,869)	8.4
Contractions	421,314	(3,919,789)	9.3	522,585	(4,840,937)	9.3
Ratio Total to Net	4.3	5.8		6.0	24.1	

1 The "Stronger Years" include the best ten of 19 years between 1990 and 2008 and the "Weaker Years" the worst nine years. Source: 2009 Preliminary NETS Database©

2 Establishment "births" include both startups (new enterprises) and new establishments of existing enterprises (expansions).

When we look closely at the time-series of Startups and focus on *one-person firms*, we note that between 1989 and 2000 one-person firms accounted for 56% of all firms creating jobs and 13.2% of all job created; but, between 2000 and 2008, they represented nearly 78% of all firms creating jobs and 28.5% of job created. Statistically, it appeared that one-person Startups became much more important to overall job creation. Again this appearance is misleading and demands we look for causation.

The first hint that a simple analysis of the data might mislead us was that the *time-series correlation* of one-person firm job creations (1989-2008) with all other firms' job creation (greater than one employee) was basically *zero* (-0.015)! To put this in context, the lowest correlation between job creations of firms with greater than one employee and ALL other size categories was 0.863[5]. Of course, this makes sense

[5] The lowest time-series correlation for job creation—other than one-person firms—was against firms with 500+ employees (0.863) while the highest was 0.981 for firms with 21-99 employees.

because when times are "good", they are usually good for *all* size categories and when they are "bad", they are bad for all size categories of firms. So what was causing the significant job creations associated with Startups?

Figure 2

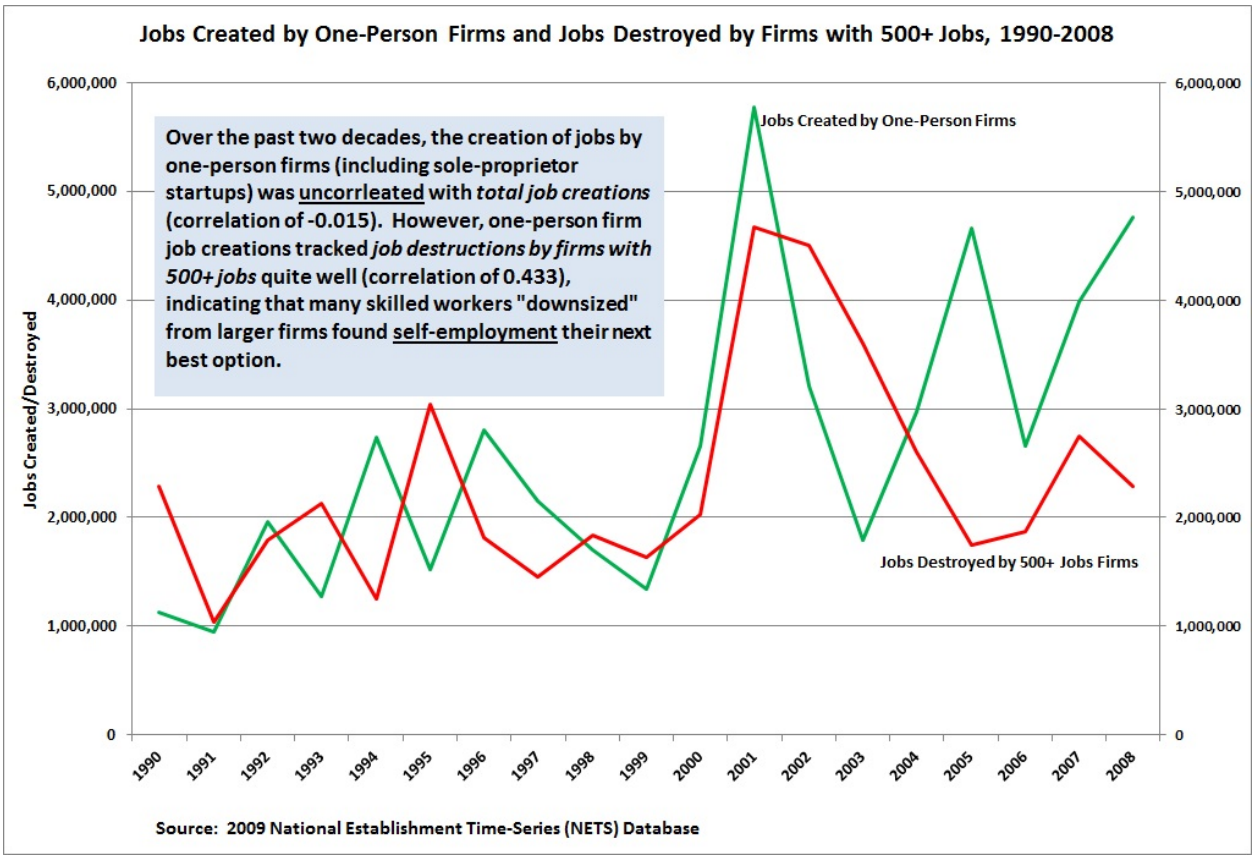


Figure 2 suggests an answer: when large firms lay off workers—especially professionals with marketable skills (e.g., programmers, lawyers, accountants, engineers, salespeople, etc.)—many of those decided that self-employment was their best employment opportunity. They formed Startups and—without "bricks and mortar"—began to do business, often selling services back to their former employers. In fact, while one-person firms' job creation was uncorrelated with overall job creation, it was relatively highly correlated with job destructions in the largest firms (0.433). What this means is that we need to look more carefully at ALL sources of growth to understand *why* the U.S. economy performed as it did.

Expansions are existing establishments that *added jobs* since the previous year. If one adds their contribution to establishment *births* which are in existing firms; then in "good times", job creations from *total expansions* exceeded startups by 63% and, in "bad times", by 86%. It is clear, from this detail, that growing, existing firms are also crucial to the overall success of the U.S. economy; and, even in the short-term, are more important than their much smaller startup counterparts.

Concomitantly, however, there exist firms that fail each year (*Deaths*) or that must lay workers off to compete in the global marketplace (*Contractions*). Throughout the last two decades, establishment

closings ("deaths") have been relatively stable: note, for instance, that in the stronger years an average 7.1 million jobs were lost annually while 7.3 million were lost in the weaker year. What contributed most to the swings in economic performance were changes in the number of startups, expansions and contractions.

However, to put the job dynamics into perspective, it is important to note that, on average, establishments with *no change* in their employment during the year dominate the economic landscape. As Table 2 indicates, from 1990-2008, over three quarters of establishments and nearly 83% of total jobs are in such establishments. Consequently, in understanding U.S. private sector growth and contraction, one can focus on a much smaller subset of U.S. establishments.

Table 2

Establishment Dynamics: How Important Are Different Types of Private Sector Establishments (1990-2008)?

Establishment Types	Average % Establishments	Average % Total Jobs
Startups	9.8%	3.5%
Expansions	4.1%	5.6%
Contractions	2.9%	7.0%
Deaths	5.8%	4.8%
No Emp Change	77.4%	82.6%

Source: 2009 Preliminary NETS Database©

Of those that contributed to job growth or contraction in any given year, another important question is *how long did those contributions last*? If, for instance, all job expansions turned into job contractions in the following year, then these would not be desirable sources of job growth. Nor would new startup jobs be desirable if those establishments "died" in the following year. Thus, one must focus on *job survivability* to truly understand the impact of establishment dynamics on U.S. economic performance.

To quickly get insight into the issue of *survivability*, one can take advantage of the NETS Database's ability to track all private sector establishments over time. In each year 1990-2004,[6] we identified establishments by *how* they contributed to U.S. economic performance in that year:

1. *Startups* were new, standalone establishments (unrelated to any other establishments/firms);
2. *Expansions* were existing establishments that *increased* the number of jobs or *new* establishments that were part of an already existing firm;

[6] While the 2009 NETS Database follows establishments annually from January 1990 to January 2009, we limit our analysis to the 1990-2004 time period in order to explore whether or not establishments survive *at least five years*.

3. *Contractions* were existing establishments that *decreased* the number of jobs; and
4. *Deaths* were establishments that *ceased doing business* during the year.[7]

Of those *Startups* formed between 1990 and 2004, over one-half have already failed while only one-third of both *Expansions* and *Contractions* failed during the same period (see Table 3). Interestingly, those continuing establishments with no changes in their employment were slightly more vulnerable than other existing operations. One hypothesis about the latter observation might be that dynamic businesses—whether growing or contracting—are more likely to survive than those that are not adapting to changing economic climates.

Table 3

Establishment Survivabilty: Startups Are Much More Vulnerable than Continuing Operations (Establishments by Type of Growth, 1990-2004)

Establishment Types	% Estabs Still Active in 2009	% of Deaths 5 Yrs or Less
Startups	46.4%	78.5%
Expansions	67.4%	61.0%
Contractions	66.4%	68.0%
No Emp Change	62.0%	66.1%

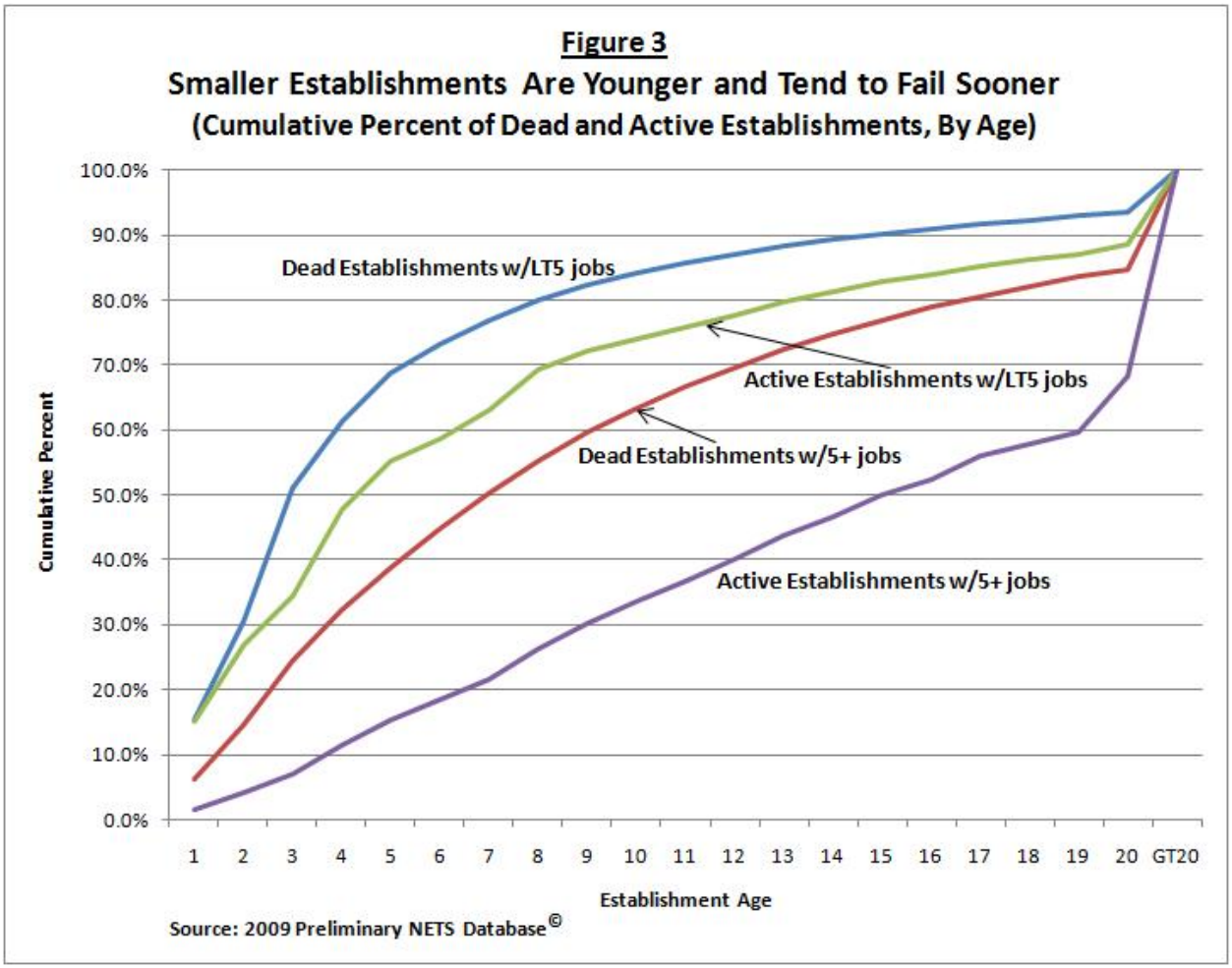
Source: 2009 Preliminary NETS Database©

Note also, in column 2 of Table 3, nearly 80% of *Startup* deaths occurred within the first five years, a rate nearly 30% higher than for *Expansions*. Contracting establishments (*Contractions*)—while not significantly more likely to fail than *Expansions*—do have a slightly higher rate of failure within the first five years. In other words, while contracting establishments, on average, are no more likely to fail, cutting jobs in the early, formative years is often a precursor to failure.

To get a better sense of when establishments fail, Figure 3 provides a summary of the establishment age distributions for both establishments that died 1990-2008 (17.5 million) and for those that were still active in 2009 (23.8 million). As the age distributions indicate, smaller establishments like startups are much more likely to fail at an early age. Small establishments (less than 5 employees) that failed over the period had a median age of 3 years; while the median age of *active* small establishments in 2009 was 5 years in business. For establishments with 5+ jobs, those that failed did so at a median age of 7 years (more than twice that of smaller establishments) and active establishments with 5+ jobs in 2009

[7] At the regional level, in- and out-migration also contribute to job growth and decline; but net out at the national level. In addition, to the extent that foreign firms establish U.S. operations or U.S. operations move off-shore, these show up, respectively, as births and deaths in the *NETS Database*.

had a median age of 15 years in business. This is consistent with the above analysis that showed that *startups* over the last two decades tend to have, on average, three jobs; have less than a 50% chance of still being active in 2009; and tend to fail before their fifth year in business.



Policy Implications and Future Analysis

One policy implication of these figures is that the rate of return to investing in a single job formed by a *startup* is currently far lower than that of a job in an already *existing firm* because the startup job is much less likely to survive. However, as Table 1 indicates, there are a significant number of startups every year and providing support to them to increase their life expectancy may prove fruitful as one prong of a *balanced* economic development strategy. However, when we also realize that many "startups" are really professionals deciding that *self-employment* is the best employment opportunity they have, we should exercise care before we implement policies that favor startups over more established midmarket companies.

Expansions by existing firms are clearly a key component of long-term job creation and focusing on those factors that encourage such investment is also an important element of economic development

policy. Such factors as capital availability, labor force training and export development all play a role in supporting the growth and global competitiveness of small to mid-size companies. The evidence suggests that, if we could (1) increase the rate of growth of expanding firms and (2) move a small percentage of the larger "No Employment Change" category into the *expansion* column, that our economic development efforts would be most effective.

Alternatively, efforts to lower failure rates or reduce job contractions are more ambiguous as they may simply delay the important economic transitions (e.g., adoption of new technologies, target market shifts, creation of strategic alliances) that must be made in a competitive economy. It is, perhaps, a testable hypothesis that more impact comes from government enabling the "best" competitive environment than any targeted policies.

Lastly, this short monograph is meant to do nothing more than suggest that better public policy will come from our focusing research on the *components of job growth*. This requires peeling away the layers of "net growth" and looking at who contributes to lasting job growth.

In a recent monograph, this author[8] pointed out the striking range across metropolitan areas in the historical survivorship of jobs created by *startups*: while over 70% of jobs created in Raleigh-Durham, NC survived at least five years, less than 50% similarly survived in the Philadelphia, PA metropolitan area. Correspondingly, while over two-thirds of startup jobs in Brownsville-Harlingen, TX; Shreveport, LA; Sioux Falls, SD; Fort Meyers-Cape Coral, FL; and Green Bay, WI survived at least five years, less than 50% survived in the Manchester, NH metro area.

Focusing on industries in the 1997-2008 analysis period, average *startup rates* (with 5+ year survival) ranged from a high of 22.2% for Communication Services, NEC (SIC 489) to a low of 0.7% for Savings Institutions (SIC 603); and *job survival rates* ranged from 100% for Lead and Zinc Ores (SIC 103) to 19% for Watches, Clocks, Watchcases & Parts (SIC 387). These kinds of wide ranges in new establishment formation and job survival rates—both across regions and industries—cry out for more detailed analysis that controls for industry mix and regional policy differences. While well beyond the scope of this monograph, the *NETS Database* allows us to proceed down that path.

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[8] Donald W. Walls, *Which Metropolitan Markets Are Best at Fostering New Firms that Survive?* Walls & Associates Working Paper, January 2010.