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High-employment-growth firms: defining and counting them

Many high-growth firms are the youngest and the smallest firms, but much of the job creation attributable to high-growth firms comes from older firms.

Employment growth is a key indicator of labor market performance. Particularly following recessions, poli cymakers look for the appropriate levers to pull that will accelerate employment growth. For several decades, it has been thought that small businesses are the fountain of job growth. This thinking is backed up by data from the Business Employment Dynamics (BED) program at the Bureau of Labor Statistics (BLS). The BED data show that firms with fewer than 500 employees—the criteria often used for defining small firms—account for about two-thirds of net jobs created.[1] However, the BED data also show that 99.5 percent of all firms have fewer than 500 employees and represent 54.5 percent of total private employment.[2]

Recent thinking in the economic and policymaking communities is that young firms and small firms are a key source of job growth.[3] Small firms are both young and old, and many well-established small firms are not job generators—the corner grocery store comes to mind as well as other examples, such as neighborhood restaurants and the local dry cleaners. But some entrepreneurs dream of finding an untapped niche and starting a business that will grow to national stature; these are the entrepreneurs that policymakers have in mind when thinking of the generators of future jobs. However, the problem with targeting young, small businesses as the focus of job creation is that the outcomes of new businesses are diverse. Some new businesses grow phenomenally, but 20 percent of newly created establishments don’t survive their

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first year in business, 32 percent don't survive their first 2 years, and 50 percent don't survive their first 5 years.[4]

To focus on those businesses that are truly job creators, economists and policymakers are now talking about "high-growth firms."[5] High-growth firms are a very small subset of all firms but contribute substantially to job creation. In this article, we use the BED data to provide estimates of the number of high-growth firms and their contribution to employment growth in the U.S. economy. We find that 2 percent of all firms in 2009 were high-growth firms during the 2009–2012 period, yet these relatively few high-growth firms were responsible for 35 percent of all gross job gains by firms that expanded their employment over that period.

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Defining high-growth firms

The first step towards estimating the number of high-growth firms and their contribution to employment growth is to define what high-growth firms are. This task, more challenging than may at first appear, starts with the Organisation for Economic Co-operation and Development (OECD) definition of high-growth firms: firms with 10 or more employees that have average annualized growth greater than 20 percent per year over a 3-year period, as measured by employment levels or employee turnover.[6]

One issue for defining high-growth firms is the period over which growth is measured. Note that the OECD uses a 3-year period. If the period is short—say, a year—then firms with temporary contracts might be classified as high-growth firms even though their employment growth is temporary and their employment levels will decline when the contract is completed. The period for defining high-growth firms should be long enough such that short-run transitory changes in employment are not falsely measured as high growth. For this reason, the OECD-definition focus on growth over 3 years seems appropriate.

Related to the issue of short-run transitory growth is whether high-growth firms should be defined on the basis of *sustained* growth—that is, growth each year—over the 3-year period. It is reasonable to state that a firm which grows by, say, 20 percent a year for 3 consecutive years is a high-growth firm during this 3-year period. This firm has grown by 72.8 percent growth over 3 years (1.2 × 1.2 × 1.2 = 1.728). But should a firm that grows by 72.8 percent in 1 year, with no growth in the other 2 years, be considered a high-growth firm? We believe yes. The primary reason, continuing with the example, is that firms which have grown by 72.8 percent in 1 year with no growth in the other 2 years have created the same number of jobs in a 3-year timeframe as firms which have grown by 20 percent in 3 consecutive years. When defining high-growth firms by the number of jobs created during a 3-year period, the year-by-year pattern of how those jobs were created should not matter.

Some of the first estimates of high-growth firms in the literature did not use the OECD definition or another definition that incorporates a threshold; instead, these estimates focused on the top 1 percent of growing firms. The problem with this top-1-percent approach is that it is difficult to create a consistent time series of high-growth firms because the threshold that defines the top 1 percent of firms is higher during the expansion phase of the business cycle than during the contraction phase.

The OECD threshold (average annualized growth of 20 percent per year over a 3-year period) is measured as a percentage rather than as a level. Measuring high-growth firms as those which grow by a certain percentage will lead to small firms being more likely to be classified as high-growth firms, as it's easier for a small firm than a large firm to grow by 20 percent—for example, a five-employee firm needs to add just one employee. On the other hand, measuring high-growth firms as those which grow by a certain level will lead to large firms being more likely to be classified as high-growth firms, as it's easier for a large firm than a small firm to grow by 20 employees. To avoid classifying small firms with a small amount of growth as high-growth firms, the OECD definition requires high-growth firms to have 10 or more employees.

The estimates presented in this article differ from the OECD definition on this point. In the U.S. private sector, more than 75 percent of firms have fewer than 10 employees.[7] This means that the OECD definition excludes the approximately 3.8 million firms (of the 5 million total private-sector firms) with fewer than 10 employees from being classified as high-growth firms. The modified OECD definition used in this paper incorporates a threshold in both levels and percentages.

This paper uses a "kink point" approach for defining a threshold in both levels and percentages. Under the OECD definition, as previously noted, firms with 10 or more employees are classified as high-growth firms if they grow by more than 72.8 percent over a 3-year period (this is equivalent to average annualized growth of greater than 20 percent per year over a 3-year period). Thus the threshold for a firm with 10 employees is growth of 7.28 employees or more over 3 years. Expressing this in integers—because the BED does not measure fractions of a job—a firm with 10 employees needs to grow by 8 or more employees over a 3-year period to be classified as a high-growth firm. The "kink point" approach says that any firm with fewer than 10 employees that grows by 8 or more employees over a 3-year period will be classified as a high-growth firm. Combining this 8-employee-or-more threshold with the OECD threshold of 72.8 percent or more includes both small firms and large firms in the analysis. The threshold in levels—8 or more employees—will be the relevant threshold for defining small firms as high-growth firms, and the threshold in percentages—72.8 percent or more—will be the relevant threshold for defining large firms as high-growth firms.

The BED data

The BED data are longitudinally linked microdata from the BLS business register. The Quarterly Census of Employment and Wages (QCEW) program uses the BLS list of business establishments; these approximately 9.2 million establishments account for 98 percent of employment on nonfarm payrolls. The QCEW data contain high-quality, high-frequency, and timely information (for an administrative data source) on employment and wages. The QCEW data are available 6 months after the reference quarter, and the BED data are available 7 months after the end of the reference quarter. The QCEW data are used as the sampling frame and the employment benchmark for some BLS establishment-based surveys, are a major input into the Bureau of Economic Analysis National Income and Product Accounts, and are an important source of data for labor market research.

The BED data are created by linking QCEW establishments across quarters to create a longitudinal history. Establishments classified as government or private households are not in the BED data. To ensure the quality of the longitudinal establishment linkages, BLS uses a multistep process to link the microdata over time. This linkage process consists of administrative matches based on a unique identifier, a probability-based weighted match, and an analyst review match.[8]

The majority of BED statistics measure quarterly gross jobs gains and gross job losses. Gross job gains are the number of jobs gained by establishments that open or expand, and gross job losses are the number of jobs lost by establishments that close or contract. The subtraction of gross job losses from gross job gains yields net employment change. The quarterly gross job gains and gross job losses are published for both establishments and firms. An establishment is defined as an economic unit that produces goods or services, usually at a single physical location, and engages in one or predominantly one activity. A firm is a business, either corporate or otherwise, and may consist of one establishment or of multiple establishments aggregated by federal Employer Identification Number (EIN).

The statistics on high-growth firms presented in this article can be seen as the natural next data product from the BED program. In 2003, the BED program started publication with quarterly establishment-level statistics of gross job gains and gross job losses. In 2005, the BED expanded its product line by publishing quarterly *firm*-level statistics of gross job gains and gross job losses. The tabulations of gross job gains and gross job losses by firm size have become one of the most popular BED outputs. In 2010, the BED program released establishment-age and establishment-survival statistics. These statistics document the number of establishments and the employment of all establishments born in a certain year and follow establishments year by year from their birth to the current year.[9] The high-growth firm statistics in this article are based on multiyear linkages of the *firm*-level data and are the first statistics from the BED program that track firms across long periods.

Two final points need to be mentioned. First, as a result of the longitudinal linkage algorithm used by the BED, the high-growth-firm statistics in this article are not influenced by the employment gains and losses that occur as a result of mergers and acquisitions. The technical details of this are explained in a detailed endnote.[10] Second, all statistics in this article are research tabulations from the BED program at the BLS.

Estimates of high-growth firms

As shown in table 1, there were about 4.9 million private sector firms in March 2009, and these firms employed 106.2 million employees. We also see that 1.2 million firms which existed in March 2009 were expanding during the March 2009 to March 2012 period, and these expanding firms created 12 million jobs over this period. We classify 96,900 of these expanding firms as high-growth firms. These high-growth firms created 4.2 million jobs during the 3 years.

Table 1. High-growth firms (HGFs) during 3-year periods beginning in March 1994 through March 2009

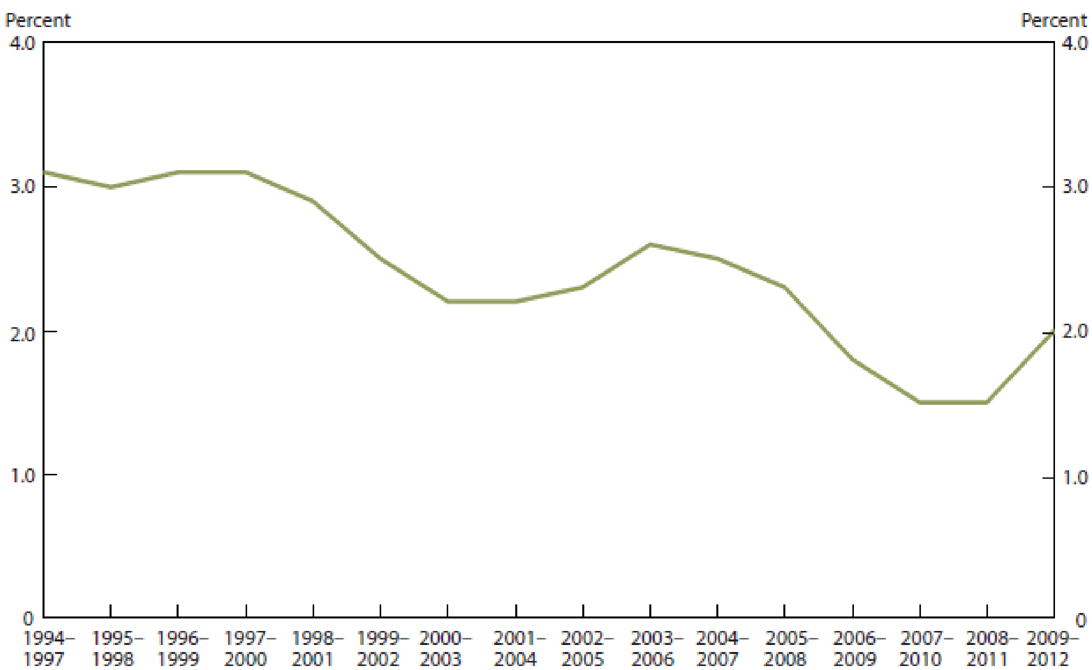
Period	Total number of firms in the base year	Total employment in the base year	Total number of expanding firms	Gross job gains by expanding firms	Number of high-growth firms	Gross job gains by high-growth firms	Number of HGFs as a percent of total firms	Number of HGFs as a percent of total expanding firms	Gross job gains by HGFs as a percent of all gross job gains by expanding firms
1994–1997	4,371,354	91,285,619	1,386,851	16,692,634	137,349	7,406,388	3.1	9.9	44.4
1995–1998	4,452,654	94,587,920	1,372,494	17,297,423	134,632	7,734,711	3.0	9.8	44.7
1996–1999	4,499,284	96,535,424	1,401,180	18,141,319	138,786	8,227,784	3.1	9.9	45.4
1997–2000	4,582,633	99,409,463	1,424,565	18,718,508	142,452	8,398,678	3.1	10.0	44.9
1998–2001	4,615,354	102,225,657	1,389,479	17,887,921	134,619	7,997,312	2.9	9.7	44.7
1999–2002	4,696,446	104,680,386	1,337,401	15,222,729	118,144	6,101,836	2.5	8.8	40.1
2000–2003	4,738,860	107,656,901	1,282,732	13,687,884	105,512	5,294,056	2.2	8.2	38.7
2001–2004	4,760,163	108,503,560	1,301,211	13,359,247	104,876	5,006,604	2.2	8.1	37.5
2002–2005	4,765,453	105,774,633	1,327,554	14,185,233	111,164	5,375,980	2.3	8.4	37.9
2003–2006	4,813,800	105,048,472	1,377,653	15,484,154	123,154	5,902,606	2.6	8.9	38.1
2004–2007	4,875,307	105,920,838	1,367,614	15,409,133	122,152	5,501,995	2.5	8.9	35.7
2005–2008	4,939,612	107,913,198	1,330,648	14,455,570	114,348	4,827,632	2.3	8.6	33.4
2006–2009	5,052,954	110,493,780	1,157,367	11,275,608	90,441	3,658,879	1.8	7.8	32.4
2007–2010	5,095,941	111,994,015	1,061,025	9,309,823	77,265	3,083,703	1.5	7.3	33.1
2008–2011	5,072,120	112,088,374	1,076,186	9,469,136	78,195	3,192,080	1.5	7.3	33.7
2009–2012	4,897,649	106,223,905	1,243,277	12,006,016	96,900	4,200,345	2.0	7.8	35.0

Sources: U.S. Bureau of Labor Statistics, Business Employment Dynamics research data, and authors' calculations.

About 2 percent of the 4.9 million firms in 2009 were high-growth firms in the 2009–2012 period; these 96,900 high-growth firms accounted for close to 8 percent of the 1.2 million expanding firms. Furthermore, high-growth firms contributed 35 percent of the gross job gains of expanding firms over the 2009–2012 period. These statistics tell us that the number of high-growth firms is relatively small, but these high-growth firms created proportionally more jobs than the average expanding firm. If we calculate average jobs created, high-growth firms created, on average, 43.3 jobs per firm over the 2009–2012 period, whereas all expanding firms created, on average, 9.7 jobs per firm over the same period. The average high-growth firm created roughly 4.5 times more jobs than did the average expanding firm.

Table 1 also reports the time series of high-growth firms during the past 16 years. In chart 1, we graph the time series of high-growth firms as a percentage of all firms. We see that the percentage of firms that are high-growth firms has declined over time, from 3.1 percent during the mid-to-late 1990s to 1.5 percent in the 2007–2010 and 2008–2011 timeframes. Part of this decline appears to be a general trend across the 14 years of analysis, while the other part of the decline appears to be due to recessions.[11] We see a decline in the percentage of high-growth firms during the years associated with the 2001 recession, from 3.1 percent in the mid-to-late 1990s to 2.2 percent for the 3-year intervals 2000–2003 and 2001–2004. The percentage of high-growth firms increased to 2.6 percent during the mid-2000s as the economy came out of the 2001 recession, but fell to a low of 1.5 percent during the 3-year intervals (2007–2010 and 2008–2011) associated with the 2007–2009 recession. The percentage of high-growth firms then increased to 2.0 percent in the 2009–2012 period as the economy grew out of the recession.

Chart 1. High-growth firms as a percent of total firms during 3-year periods beginning in March 1994 through March 2009



SOURCES: U.S. Bureau of Labor Statistics, Business Employment Dynamics research data, and authors' calculations.

Statistics by size and age. Often associated with discussions of high-growth firms is a reference to gazelles. Ga zelles are young high-growth firms. The term "gazelle" dates back to the work of David Birch in 1979.[12] Birch re ferred to the fastest growing firms as gazelles, in addition to referring to the majority of small firms that don't grow as "mice" and referring to the large firms as "elephants." In table 2, we provide evidence on gazelles by document ing the number of high-growth firms in the 2009–2012 timeframe by their age in 2009.

Table 2. High-growth firms (HGFs), 2009–2012, by age in March 2009

Age in the base year	Total number of firms in the base year	Number of high-growth firms	Gross job gains by high-growth firms	HGFs as a percent of all firms	HGFs as a percent of all HGFs	Gross job gains by HGFs as a percent of all HGF gross job gains	Average number of jobs gained by HGFs
0 (births)	367,688	13,561	366,618	3.7	14.0	8.7	27.0
1 year old	325,736	10,178	304,179	3.1	10.5	7.2	29.9
2 years old	300,533	8,258	260,598	2.7	8.5	6.2	31.6
3 years old	277,704	6,982	222,539	2.5	7.2	5.3	31.9
4 years old	245,022	5,814	207,554	2.4	6.0	4.9	35.7
5 years old	214,092	4,858	169,989	2.3	5.0	4.0	35.0
6 years old	199,449	4,344	173,018	2.2	4.5	4.1	39.8
7 years old	180,602	3,655	157,631	2.0	3.8	3.8	43.1
8 years old	168,485	3,221	139,404	1.9	3.3	3.3	43.3
9 years old	160,073	3,017	143,447	1.9	3.1	3.4	47.5
10 years or older	2,458,265	33,012	2,055,368	1.3	34.1	48.9	62.3
Total	4,897,649	96,900	4,200,345	2.0	100.0	100.0	43.3

Sources: U.S. Bureau of Labor Statistics, Business Employment Dynamics research data, and authors' calculations.

We see in table 2 that 13,561 of the 96,900 high-growth firms in the 2009–2012 timeframe were newly born firms. (In table 2, births are defined as those firms born after March 2008 and before March 2009). Expressed as a percentage, 14.0 percent of high-growth firms were newly born firms. The statistics in this table also tell us that the propensity to be a high-growth firm monotonically declines with age: 3.7 percent of newly born firms (age 0) in 2009 became high-growth firms in the 2009–2012 period and 3.1 percent of 1-year-old firms in 2009 became high-growth firms in the 2009–2012 period, whereas 1.3 percent of firms 10 years old or older in 2009 were high-growth firms in the 2009–2012 period.

Although younger firms are more likely to be high-growth firms, we also see that the younger high-growth firms contribute proportionally less of the total high-growth firms' gross job gains.[13] For example, also shown in table 2, 14.0 percent of high-growth firms were newly born in 2009, but these young high-growth firms contributed only 8.7 percent of the gross job gains during the 2009–2012 period. Similarly, 10.5 percent of high-growth firms were 1 year old, but these young high-growth firms contributed only 7.2 percent of the gross job gains. On the other hand, 34.1 percent of high-growth firms were 10 years old or older, and these older high-growth firms contributed 48.9 percent of the gross job gains. These statistics highlight that the average older high-growth firm created more jobs than the average younger high-growth firm. The average number of jobs created per high-growth firm generally increases with the age of the firm. High-growth firms that were less than 2 years old created, on average, 27–30 jobs per firm over the 2009–2012 period, whereas high-growth firms that were 10 years old or older created, on average, 62 jobs per firm over the same period.

In table 3, we present statistics on high-growth firms in the 2009–2012 period by firm size in 2009. These statistics are of interest because they show how our modification to the OECD definition affects the total number of high-growth firms. Over half of the high-growth firms in the 2009–2012 period that we identified in the BED data had fewer than 10 employees in 2009. To be specific, the statistics in table 3 show that 24,349 high-growth firms had 1–4 employees in 2009 and 24,307 high-growth firms had 5–9 employees in 2009. These 48,656 firms represented 50.2 percent of the total 96,900 high-growth firms. Recall that in the modified OECD definition, firms with fewer than 10 employees were classified as high-growth firms if they grew by 8 or more employees during the 2009–2012 period. The 24,349 high-growth firms that started with 1–4 employees grew by an average of 18.0 employees per firm, and the 24,307 high-growth firms with 5–9 employees in 2009 grew by an average of 16.5 employees per firm. At the other end of the size distribution, high-growth firms with more than 1,000 employees in 2009 grew by an average of 3,060 employees per firm.

Table 3. High-growth firms (HGFs), 2009–2012, by size in March 2009

Size in the base year	Total number of firms in the base year	Number of high-growth firms	Gross job gains by high-growth firms	HGFs as a percent of all firms	HGFs as a percent of all HGFs	Gross job gains by HGFs as a percent of all HGF gross job gains	Average number of jobs gained by HGFs
1–4 employees	2,730,792	24,349	437,872	0.9	25.1	10.4	18.0
5–9 employees	967,980	24,307	401,217	2.5	25.1	9.6	16.5
10–19 employees	587,383	24,802	558,772	4.2	25.6	13.3	22.5
20–49 employees	375,331	15,044	711,247	4.0	15.5	16.9	47.3
50–99 employees	123,428	4,739	495,882	3.8	4.9	11.8	104.6
100–249 employees	71,045	2,539	551,835	3.6	2.6	13.1	217.3
250–499 employees	21,603	709	335,470	3.3	.7	8.0	473.2
500–999 employees	10,426	253	224,514	2.4	.3	5.3	887.4
1,000 or more employees	9,661	158	483,536	1.6	.2	11.5	3060.4
Total	4,897,649	96,900	4,200,345	2.0	100.0	100.0	43.3

Sources: U.S. Bureau of Labor Statistics, Business Employment Dynamics research data, and authors' calculations.

Although more than half of high-growth firms had fewer than 10 employees in the base year, these initially small high-growth firms contributed 20 percent of the employment growth attributable to high-growth firms. Firms with 1–4 employees in 2009 were responsible for 10.4 percent of the high-growth job creation in the 2009–2012 period, and firms with 5–9 employees in 2009 were responsible for 9.6 percent of the high-growth job creation in the

2009–2012 period. More broadly, high-growth firms with fewer than 20 employees had proportionally less job creation than did high-growth firms with 20 or more employees. The disparity is especially pronounced for the largest firms. Only 1.2 percent of high-growth firms have 250 or more employees, but these 1,120 initially large high-growth firms contributed 24.8 percent of all the job creation attributable to high-growth firms.

As stated earlier, young and small firms are the focus of economists and policymakers concerned with job creation. In table 4, we present the number of 2009–2012 high-growth firms classified by both the age and firm size in 2009. We have aggregated the four highest size classes (employment of 100–249, 250–499, 500–999, and 1,000 or more) in order to limit disclosure problems associated with small cells.

Table 4. High-growth firms (HGFs), 2009–2012, by size and age in March 2009

Age	1–4 employees	5–9 employees	10–19 employees	20–49 employees	50–99 employees	100 or more employees	Total
0 (births)	6,576	3,536	2,344	905	147	53	13,561
1 year old	3,374	3,010	2,388	1,076	247	83	10,178
2 years old	2,279	2,379	2,144	1,063	261	132	8,258
3 years old	1,742	1,934	1,902	1,023	250	131	6,982
4 years old	1,277	1,540	1,593	989	257	158	5,814
5 years old	1,009	1,267	1,373	805	261	143	4,858
6 years old	832	1,125	1,254	746	223	164	4,344
7 years old	714	896	1,026	659	204	156	3,655
8 years old	613	743	905	599	232	129	3,221
9 years old	541	724	847	550	187	168	3,017
10 years or older	5,392	7,153	9,026	6,628	2,470	2,343	33,012
Total	24,349	24,307	24,802	15,044	4,739	3,659	96,900

Sources: U.S. Bureau of Labor Statistics, Business Employment Dynamics research data, and authors' calculations.

The number of high-growth firms is concentrated in two parts of table 4—the top left corner and the row for initial age 10 years or older. In this table, we have used a bold font for all age–size cells that represent more than 1,500 high-growth firms. Two of the largest cells are births with 1–4 employees (6,576 high-growth firms) and firms that are at least 10 years old and had 10–19 employees (9,026 high-growth firms) at the start of 2009. All cells in the row for firms 10 years or older contain more than 1,500 high-growth firms—the 33,012 high-growth firms identified here are 34.1 percent of all high-growth firms. The 14 bold-font cells in the upper-left corner represent firms that met the following criteria: they were less than 5 years old, had fewer than 20 employees, and included more than 1,500 high-growth firms. The 36,741 high-growth firms identified in these 14 cells are 37.9 percent of all high-growth firms. Thus more than 70 percent of all high-growth firms are firms 10 years or older or firms less than 5 years old with fewer than 20 employees.

But just as important as the number of high-growth firms is the number of jobs created by high-growth firms. We report these data, by initial age and size, in table 5. In this table, we have used a bold font for all age–size cells with more than 100,000 gross job gains. As shown, the largest number of jobs created in these cells is the 1,148,555 jobs created by firms that were at least 10 years old and had 100 or more employees. There are five other cells in table 5 depicting job creation exceeding 100,000. Four of these five cells are firms that were at least 10 years old with 5–99 employees in the base year. The other large cell is the smallest and youngest firms—newly born firms with 1–4 employees in their first year.

Table 5. Gross job gains by high-growth firms, 2009–2012, by size and age in March 2009

Age	1–4 employees	5–9 employees	10–19 employees	20–49 employees	50–99 employees	100 or more employees	Total
0 (births)	132,936	73,264	66,126	52,225	22,572	19,495	366,618
1 year old	60,321	51,971	68,629	61,707	34,289	27,262	304,179
2 years old	38,978	38,663	50,439	54,560	34,930	43,028	260,598
3 years old	28,838	30,997	42,092	51,211	28,076	41,325	222,539
4 years old	21,478	24,974	36,218	46,255	27,509	51,120	207,554
5 years old	19,274	20,089	28,637	35,297	27,133	39,559	169,989
6 years old	14,019	17,627	26,718	34,746	23,102	56,806	173,018
7 years old	12,863	14,578	21,705	32,540	19,795	56,150	157,631
8 years old	10,522	11,034	18,669	26,998	22,578	49,603	139,404
9 years old	8,974	11,039	18,150	24,026	18,806	62,452	143,447
10 years or older	89,669	106,981	181,389	291,682	237,092	1,148,555	2,055,368
Total	437,872	401,217	558,772	711,247	495,882	1,595,355	4,200,345

Sources: U.S. Bureau of Labor Statistics, Business Employment Dynamics research data, and authors’ calculations.

We conclude that many high-growth firms are the youngest and the smallest firms, and these young and small firms create many jobs. But a large number of high-growth firms also are older firms, and much of the job creation attributable to high-growth firms comes from these older firms.

Statistics by industry. In table 6, we present statistics on high-growth firms in the 2009–2012 period by industry.[14] Of the high-growth firms, 46.2 percent were in the following four industries: construction; professional, scientific, and technical services; health care and social assistance; and accommodation and food services. Fifty-two percent of all jobs created by high-growth firms were in the following four industries: professional, scientific, and technical services; administrative, support, and waste management; health care and social assistance; and manufacturing.

Table 6. High-growth firms (HGFs), March 2009 through March 2012, by industry

Industry	Total number of firms in the base year	Number of high-growth firms	Gross job gains by high-growth firms	HGFs as a percent of all firms	HGFs as a percent of all HGFs	Gross job gains by HGFs as a percent of all HGF gross job gains	Average number of jobs gained by HGFs
Agriculture, forestry, fishing, and hunting	74,915	1,748	72,323	2.3	1.8	1.7	41.4
Mining	18,918	1,088	75,191	5.8	1.1	1.8	69.1
Utilities	6,582	79	4,470	1.2	.1	.1	56.6
Construction	565,076	11,351	334,142	2.0	11.7	8.0	29.4
Manufacturing	259,531	8,350	382,778	3.2	8.6	9.1	45.8
Wholesale trade	284,400	5,526	181,056	1.9	5.7	4.3	32.8
Retail trade	577,759	7,323	254,240	1.3	7.6	6.1	34.7
Transportation and warehousing	134,523	3,856	138,800	2.9	4.0	3.3	36.0
Information	60,942	1,649	93,540	2.7	1.7	2.2	56.7
Finance and insurance	214,324	2,353	132,293	1.1	2.4	3.1	56.2
Real estate, rental, and leasing	216,924	1,854	61,485	.9	1.9	1.5	33.2
Professional, scientific, and technical services	621,389	11,507	483,909	1.9	11.9	11.5	42.1
Management of companies and enterprises	14,260	442	26,694	3.1	.5	.6	60.4
Administration, support, and waste management	259,603	8,930	870,976	3.4	9.2	20.7	97.5
Education services	61,121	2,275	126,599	3.7	2.3	3.0	55.6
Health care and social assistance	571,173	11,065	451,081	1.9	11.4	10.7	40.8
Arts, entertainment, and recreation	84,345	2,180	74,717	2.6	2.2	1.8	34.3
Accommodation and food services	412,340	10,805	332,572	2.6	11.2	7.9	30.8
Other services (except public administration)	423,116	4,468	102,584	1.1	4.6	2.4	23.0
Unclassified	36,408	51	895	.1	.1	.0	17.5
Total	4,897,649	96,900	4,200,345	2.0	100.0	100.0	43.3

See footnotes at end of table.

Sources: U.S. Bureau of Labor Statistics, Business Employment Dynamics research data, and authors' calculations.

The distribution of gross job gains All the statistics presented thus far in this article are based upon what we call the modified OECD definition. In this section, we ask how our conclusions about high-growth firms might change if we modified this definition.

In table 7, we present the distribution of expanding firms by average annual growth rate and show their gross job gains over the 2009–2012 period. The definition of firm growth in the first column of table 7 is key to understanding this table. For example, the first row shows the number of expanding firms and their job creation according to the criteria that these firms grew by less than 5 percent if they had an initial size of at least 10 employees or that these firms grew by 1 employee if their initial size was less than 10. The growth of 0 to less than 5 percent for larger firms and the growth of 1 employee for smaller firms are based on the kink point algorithm defined earlier in this article. The growth of percentages and levels in each row of table 7 is based on the kink point approach and is designed to treat small and large firms fairly in our definition. The sum of the fifth and sixth rows equals the number of firms and their associated gross job gains for the modified OECD definition of high-growth firms. If we wanted a slightly "tighter" (more restrictive) definition of high-growth firms, we could look at only the sixth row of table 7. Many (64,314) of the high-growth firms according to the modified OECD definition would still be classified as high-growth firms if we required 25-percent growth instead of 20-percent growth for the large firms or growth of 10 or more employees instead of 8 or more for the initially small firms. Furthermore, much of the job creation attributable to high-growth firms originated from the firms that grew a lot: 3.3 million of the 4.2 million new jobs attributable to high-growth firms came from firms whose growth met the more stringent growth requirements.

Table 7. Distribution of 3-year growth, March 2009 through March 2012

Firm growth over 3 years	Number of expanding firms 2009	Gross job gains 2009–2012	Percent of expanding firms	Percent of gross job gains
0 to < 5 percent average annual growth if initial size is = 10 or growth of 1 employee if initial size is <10	575,448	2,134,880	46.3	17.8
5 to < 10 percent average annual growth if initial size is = 10 or growth of 2 to 3 employees if initial size is <10	372,748	2,648,598	30.0	22.1
10 to < 15 percent average annual growth if initial size is = 10 or growth of 4 to 5 employees if initial size is <10	136,370	1,762,609	11.0	14.7
15 to < 20 percent average annual growth if initial size is = 10 or growth of 6 to 7 employees if initial size is <10	61,811	1,259,620	5.0	10.5
20 to < 25 percent average annual growth if initial employment is =10 or growth of 8 to 9 employees if initial size is <10	32,586	888,717	2.6	7.4
25 percent or more average annual growth if initial employment is = 10 or growth of 10 or more employees if initial size is <10	64,314	3,311,592	5.2	27.6

See footnotes at end of table.

Table 7. Distribution of 3-year growth, March 2009 through March 2012

Firm growth over 3 years	Number of expanding firms 2009	Gross job gains 2009–2012	Percent of expanding firms	Percent of gross job gains
Total	1,243,277	12,006,016	100.0	100.0

Sources: U.S. Bureau of Labor Statistics, Business Employment Dynamics research data, and authors' calculations.

If we wanted a somewhat "looser" (less restrictive) definition of high-growth firms, we could look at the sum of the fourth, fifth, and sixth rows in table 7. In the fourth row, we see that there were 61,811 firms whose growth ranged from 15 percent to almost 20 percent if their initial size was 10 or more employees or that grew by 6–7 employees if their initial size was less than 10. Since the first six rows in this table are additive (and sum to the total), we see that the number of high growth firms would increase from 96,900 to 158,711 and the amount of job creation attributable to high-growth firms would increase from 4.2 million to nearly 5.5 million if we defined high-growth firms as those firms which grew by 15 percent or more if they had an initial size greater than or equal to 10 or those firms which grew by 6 or more employees if their initial size was less than 10.

The conclusion that we drew from table 1 earlier in this article is that high-growth firms are a small number of expanding firms that contribute proportionally more job creation than the average expanding firm. What we learn from table 7 is that this basic conclusion does not crucially depend upon the 20-percent and 8-employee thresholds that underlie the modified OECD definition. These thresholds result in 7.8 percent of expanding firms being classified as high-growth firms and 35.0 percent of job creation being attributable to high-growth firms. If we tighten the 20-percent and 8-employee thresholds to 25 percent and 10 employees, we find that 5.2 percent of expanding firms are classified as high-growth firms and 27.6 percent of job creation is attributable to them. If we loosen the thresholds to 15 percent and 6 employees, we find that 12.8 percent of firms are classified as high-growth firms and 45.5 percent of job creation is attributable to them. These statistics tell us that whether or not we tighten or loosen the thresholds in the modified OECD definition of high-growth firms, we still find that high-growth firms are a small number of expanding firms that contribute a large amount of job creation.

ALTHOUGH HIGH-GROWTH FIRMS HAVE RECEIVED A LOT OF RECENT ATTENTION in the press and policymaking community, little is known about the number of high-growth firms in the United States and the number of jobs they create. This article helps fills that gap. Using a modified OECD definition of high-growth firms, we documented that 2 percent of firms that existed in 2009 were high-growth firms during the 2009–2012 period and these high-growth firms were responsible for 35 percent of all gross job gains from expanding firms. The 96,900 high-growth firms created 4.2 million jobs from 2009 through 2012. These high-growth firms tended to be young and small firms as well as older firms (10 years old or older), yet much of the job creation attributable to high-growth firms came from the older firms. Finally, high-growth firms were in a variety of industries, but more than half of all jobs created by high-growth firms were created in four industries: administrative, support, and waste management; health care and social assistance; professional, scientific, and technical services; and manufacturing.

One final point should be noted about our measurement of high-growth firms. We use growth in U.S. employment to identify high-growth firms. There are other measures of firm growth—such as revenue, sales, and profit—which may not always be consistent with employment growth in the United States. In fact, productivity enhancement and outsourcing may contribute to firms' growth in sales and profit with limited or no effect on U.S. job growth. Identifying high-growth firms by growth in revenue, sales, or profits is not within the scope of this article.

SUGGESTED CITATION

Richard L. Clayton, Akbar Sadeghi, David M. Talan, and James R. Spletzer, "High-employment-growth firms: defining and counting them," *Monthly Labor Review,* U.S. Bureau of Labor Statistics, June 2013

NOTES

[1] Sherry Dalton, Erik Friesenhahn, James Spletzer, and David Talan, "Employment growth by size class: comparing firm and establishment data," *Monthly Labor Review*, December 2011, pp. 3–12, https://www.bls.gov/opub/mlr/2011/12/art1full.pdf.

[2] See https://www.bls.gov/web/cewbd/table_g.txt.

[3] John C. Haltiwanger, Ron S. Jarmin, and Javier Miranda, "Who creates jobs? Small vs. large vs. young" (Cambridge, MA: National Bureau of Economic Research, working paper no. 16300, August 2010), http://www.nber.org/papers/w16300.

[4] Carol Leming, Akbar Sadeghi, James R. Spletzer, and David M. Talan, "The role of younger and older business establishments in the U.S. labor market," *Issues in Labor Statistics*, Summary 10–09, August 2010, https://www.bls.gov/opub/ils/pdf/opbils86.pdf.

[5] See Dane Stangler, "High growth firms and the future of the American economy," *Kaufman Foundation Research Series: Firm Formation and Economic Growth*, March 2010; K. Mitusch and A. Schimke, "Gazelles—high-growth companies," European Commission, Enterprise and Industry, January 31, 2011; and David B. Audretsch, "Determinants of high growth entrepreneurship," report prepared for the OECD and Danish Business Authority, "High-growth firms: local policies and local determinants" workshop, March 28, 2012, http://www.oecd.org/cfe/leed/Audretsch_determinants%20of%20high-growth%20firms.pdf.

[6] The OECD definition is from the "Eurostat-OECD manual on business demography statistics," 2007 edition. We have replaced the term "enterprises" in the OECD definition with the term "firms." Much of our discussion in this section is similar to the text in Sven-Olov Daunfeldt, Niklas Elert, and Dan Johansson, "The economic contribution of high-growth firms: Do definitions matter?" HUI working paper no. 35, January 1, 2010.

[7] See https://www.bls.gov/web/cewbd/table_g.txt.

[8] For a more thorough description of the source data and the longitudinal linkages in the BED program, see James Spletzer, R. Jason Faberman, Akbar Sadeghi, David M. Talan, and Richard L. Clayton, "Business employment dynamics: new data on gross job gains and losses," *Monthly Labor Review*, April 2004, pp. 29–42.

[9] For more information on the establishment age and survival statistics, see Leming et al., "The role of younger and older business establishments."

[10] In a simple example of mergers and acquisitions, firm A acquires firm B and the new combined firm continues under firm A's identifier. In a naive linkage algorithm, firm B would be observed to die and firm A would be observed to expand. We don't want this type of expansion to cause firm A to be classified as a high-growth firm. The longitudinal linkage algorithm used by the BED controls for this by combining firm A and firm B in the previous period and computing the employment growth as the employment of the actual combined firm in the current period minus the employment of the artificially combined firm in the previous period. For a more detailed description, see Joshua C. Pinkston and James R. Spletzer, "Annual measures of job creation and job destruction created from quarterly ES-202 microdata," *American Statistical Association 2002 Proceedings of the Section on Business and Economic Statistics*, pp. 3311–3316, https://www.bls.gov/osmr/research-papers/2002/pdf/st020230.pdf.

[11] The business cycle dates used in this article are those determined by the National Bureau of Economic Research.

[12] See David L. Birch, "The job generation process," unpublished report, MIT Program on Neighborhood and Regional Change for the Economic Development Administration (U.S. Department of Commerce, 1979); David L. Birch, "Who creates jobs?'' *Public Interest* 65

(1981), pp. 3–14; and David L. Birch, *Job creation in America: how our smallest companies put the most people to work* (New York: Free Press, 1987).

[13] We need to emphasize that in this paragraph we are discussing the contribution of younger and older firms to gross job gains and not their contribution to net employment growth. See Leming et al., "The Role of Younger and Older Business Establishments," for a discussion of the relationship between age and net employment growth.

[14] This table represents the first time that firms have been classified into industries with the use of the BED data. Although it is commonplace to classify establishments into industries, it is conceptually difficult to classify firms into industries. For a firm with establishments in many industries, should the firm's industry classification be defined by the industry with the firm's largest employment or by the industry of the greatest number of the firm's establishments? Or should the firm be divided into multiple parts, each classified by its own industry? In table 6, we classify firms into industries on the basis of the firm's industry with the maximum employment. We emphasize that the statistics in table 6 are research tabulations and are not official tabulations from the BED program at BLS.

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Employment dynamics over the last decade, *Monthly Labor Review*, August 2011.

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