Business employment dynamics: tabulations by size of employment change

*Business Employment Dynamics data are quarterly series
of gross job gain and loss statistics for the U.S. economy;
in autumn 2008, for the first time BLS published
BED data that display gross job gain and loss statistics
grouped by the number of jobs that were gained or lost*

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Business Employment Dynamics (BED) statistics from the Bureau of Labor Statistics (BLS) quantify the levels of quarterly gross job gains and gross job losses in the U.S. economy. In the second quarter of 2008, on a seasonally adjusted basis, 1.8 million establishments expanded or opened, creating 7.3 million jobs, and 2.0 million establishments contracted or closed, eliminating 7.8 million jobs. The gross job gains figure of 7.3 million is just one statistic that summarizes the underlying distribution of jobs created from businesses that have opened or expanded; the gross job losses figure of 7.8 million is also a single statistic, and it summarizes the underlying distribution of jobs lost from businesses that have closed or contracted. To explore the distribution of gross job gains, it is necessary to ask questions such as the following: how many establishments have grown by 1–4 jobs, by 5–19 jobs, and by 20 or more jobs? and how many total jobs have these establishments created? Analogous questions can explore the distribution of gross job losses.

In September 2008, BLS published new BED data quantifying the distributions of gross job gains and losses. These data are referred to as "size-of-employment-change" statistics.[1] This article documents these data and explains how they add to people's knowledge of U.S. labor market dynamics.

There are three reasons to produce and analyze size-of-employment-change statistics. The first, as noted above, is to explore the distributions of gross job gains and gross job losses. If 1.8 million expanding and opening establishments created 7.3 million jobs, this implies that the average growing establishment created 4.1 jobs. Is the distribution of gross job gains fairly tight around this average, or is the distribution of gross job gains spread out, with many establishments gaining 1 or 2 jobs and some establishments gaining 100 or more jobs? The BED size-of-employment-change data show that a large number of establishments changed their employment levels by just a few jobs, while relatively few establishments changed their employment levels by a large number of jobs.

The second reason for producing and analyzing size-of-employment-change statistics is to better understand the cyclicality of the labor market. BED statistics show that the sharp declines in employment that occurred during the 2001 recession are characterized by substantial drops in gross job gains and dramatic increases in gross job losses. Is the

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increase in gross job losses during the recession the result of a large number of establishments reducing their size by one or two employees? or is there a small number of establishments that had large layoffs? The BED size-of-employment-change data show that, during the 2001 recession, strong cyclical movements in gross job gains and gross job losses occurred predominantly in a small number of establishments that gained or lost a large number of jobs.

The third reason for producing and analyzing size-of-employment-change statistics is to better understand the more moderate labor market dynamics found to exist from the end of the 2001 recession to mid-2008, in comparison with most of the 1990s. BED data show that the amount of gross job gains and gross job losses following the 2001 recession is noticeably lower than prior to the 2001 recession. BED size-of-employment-change statistics indicate that this reduction in establishment-level employment change is concentrated in the relatively few establishments that increased or decreased their employment levels by 20 or more jobs in a quarter.

Business Employment Dynamics

BED data are quarterly gross job gain and gross job loss statistics that are tabulated by linking business establishments from the BLS Quarterly Census of Employment and Wages (QCEW) across quarters. The BED data indicate the number of jobs that are created by establishments that open or expand and the number of jobs lost from establishments that contract or close. The sum of employment increases at opening and expanding establishments is defined as gross job gains. The sum of employment losses at closing and contracting establishments is defined as gross job losses. The difference between gross jobs gains and gross job losses is the net employment change.[2]

The basic products of the BLS Business Employment Dynamics program are statistics measuring quarterly gross job gains and gross job losses at the national NAICS super-sector level, at the State total private level, and by firm size for the Nation. According to BED statistics, the U.S. economy lost ½ million net jobs (seasonally adjusted) between March 2008 and June 2008. The gross job gain and gross job loss statistics indicate that this net employment loss is the result of 7.3 million jobs added at 1.8 million opening and expanding establishments, and 7.8 million jobs lost at 2.0 million contracting and closing establishments. These gross job gains and gross job losses exemplify the sizable number of jobs and establishments that typically appear and disappear within the short timeframe of 3 months.
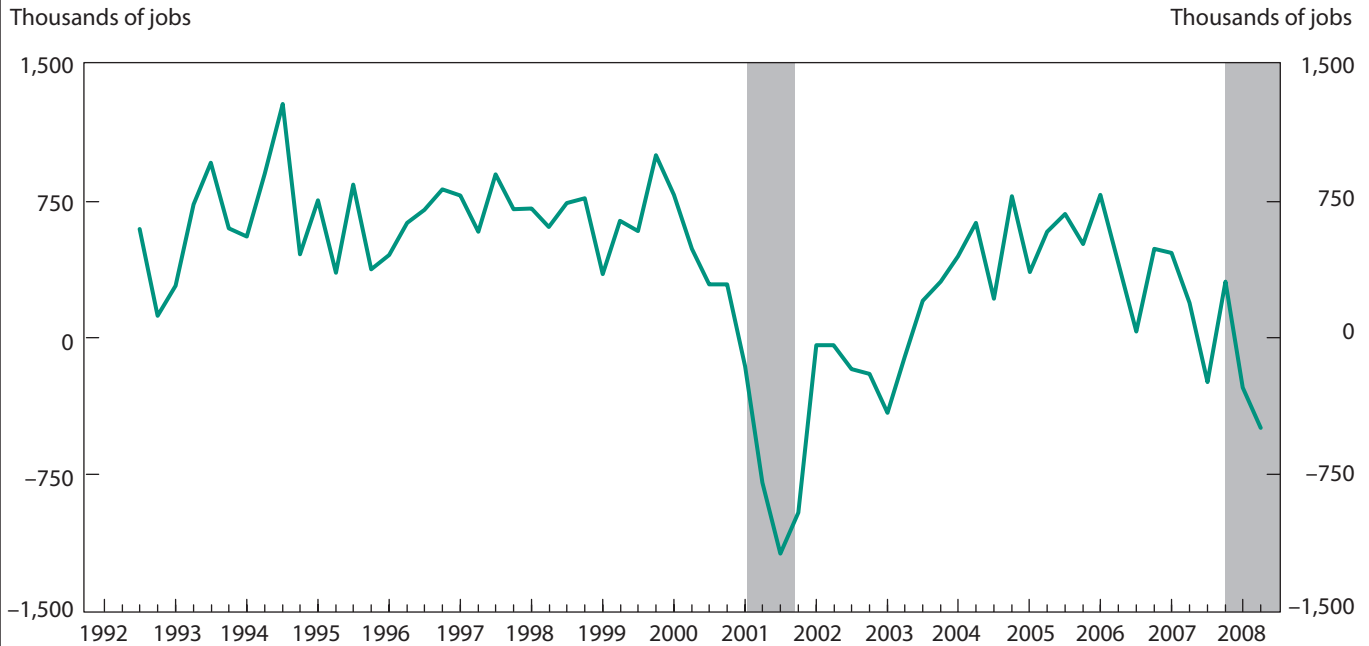
The historical BED series start in the third quarter of 1992 and currently run through the second quarter of 2008. (Statistics for the third quarter of 2008 will be released in May 2009.) The seasonally adjusted time series of quarterly net employment growth is shown in chart 1. The 2001 recession (which was determined by the National Bureau of Economic Research to have occurred from March 2001 to November 2001) is evident in this chart. Prior to the recession, between the third quarter of 1992 and the fourth quarter of 2000, net employment growth had been positive every quarter and had been averaging 639,000 net new jobs per quarter. During the recession, net employment growth was negative for all quarters of 2001, hitting a trough in the third quarter of 2001 with 1.2 million net jobs lost.

Chart 2 shows the time series of seasonally adjusted gross job gains and losses. The 2001 recession is apparent in this chart, as it was in chart 1. Between 1992 and 1999, both the gross job gain and the gross job loss series were climbing at relatively constant rates. Gross job gains dropped substantially in 2001, and gross job losses climbed dramatically in 2001. Thus the large net employment declines during the first three quarters of 2001 can be attributed to both falling gross job gains (a slowdown in the jobs created by establishment expansions and openings) and rising gross job losses (an increase in the jobs lost from establishment contractions and closings).

Size of employment change

Concepts and Definitions. The gross job gains of 7.3 million in the second quarter of 2008 are the sum of all jobs gained by the 1.8 million expanding and opening establishments. Some of these 1.8 million establishments gained 1 job, some of the establishments gained 2 jobs, and so forth. While it is conceptually possible to determine the number of establishments and the total number of jobs gained for every possible size of change, doing so would be impractical; at some point, it is best to combine gross job gain and loss statistics into a manageable number of categories organized by the size of the gain or loss. BLS has calculated and published gross job gains and losses for the following 19 categories: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11–14, 15–19, 20–24, 25–29, 30–39, 40–49, 50–74, 75–99, and 100+. These categories were chosen after an extensive analysis of the data. The categories afford a good representation of the distributions of gross job gains and losses. Data for the 19 categories are available from the BLS website.[3]

Chart 1. **Net employment change, third quarter 1992 through second quarter 2008, seasonally adjusted**

Thousands of jobs   Thousands of jobs

NOTE: The first quarter of each year ends in March, and the first quarter's endpoint is represented by the year's long tick mark. The shorter tick marks represent the endpoints of the second, third, and fourth quarters. The shaded bars denote National Bureau of Economic Research (NBER)-designated recessions, one running March 2001–November 2001 and the other beginning in December 2007. An endpoint for the more recent recession has yet to be designated.

Chart 2. **Gross job gains and gross job losses, third quarter 1992 through second quarter 2008, seasonally adjusted**
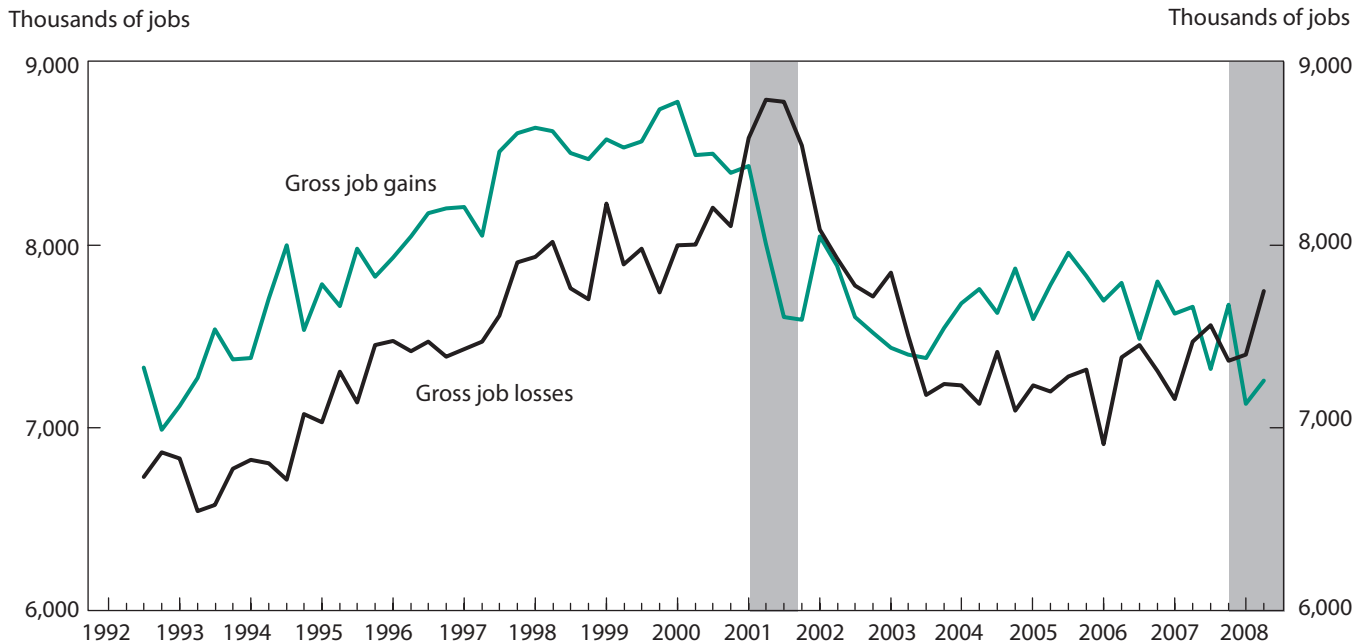
Thousands of jobs   Thousands of jobs

Gross job gains

Gross job losses

NOTE: The first quarter of each year ends in March, and the first quarter's endpoint is represented by the year's long tick mark. The shorter tick marks represent the endpoints of the second, third, and fourth quarters. The shaded bars denote National Bureau of Economic Research (NBER)-designated recessions, one running March 2001–November 2001 and the other beginning in December 2007. An endpoint for the more recent recession has yet to be designated.

In order to simplify the discussion, this article uses fewer than 19 categories. Statistics are presented using the following three categories of size of employment change: 1–4, 5–19, and 20+.

Results. Table 1 shows size-of-employment-change statistics for the second quarter of 2008, using the three categories mentioned previously. Gross job gains during the quarter were 7.3 million. Of these gains, 34.2 percent were created by the 1.5 million establishments that added 1–4 jobs, and 36.6 percent were created by the 41,000 establishments that added 20 or more jobs. Gross job losses totaled 7.8 million. Of these losses, 35.5 percent occurred in the 1.7 million establishments that lost 1 to 4 jobs, and 34.1 percent occurred in the 50,000 establishments that lost 20 or more jobs. Not reported in table 1 are the 3.5 million establishments that had no change in their employment level between the first and second quarters of 2008.

These size-of-employment-change data show that a large number of establishments changed their level of employment by a few employees, while relatively few establishments changed their level of employment by a large number of employees. The resulting gross job gains and gross job losses from these two groups of establishments are similar in magnitude. Chart 3 shows gross job gains for each of the three employment-change categories, and it also shows the number of establishments responsible for creating the gross job gains. Chart 4 does the same for gross job losses. These two charts illustrate that the levels of gross job gains and gross job losses are similar for the three size-of-employment-change

categories (the gains and losses are above 2 million jobs in all three categories), notwithstanding the number of establishments declines rapidly as the size of employment change increases. These facts demonstrate that a relatively small number of establishments (41,000 to 50,000) changing their employment levels by 20 or more jobs has been sufficient to create or lose approximately as many jobs as the more than 1.5 million establishments that changed their employment levels by just a few jobs.

Turning to the time series, one must ask whether the decline in gross job gains and the rise in gross job losses that occurred during the 2001 recession are spread evenly across the size-of–employment-change categories, or whether the gains and losses are concentrated in one particular size-of-employment-change category. The answer to this question is depicted in charts 5 and 6. The number of jobs gained and the number lost by the establishments that changed their level of employment by just a few jobs exhibit little if any movement across the business cycle. However, the amount of jobs gained and the amount lost by the establishments that altered their level of employment by 20 or more jobs exhibit strong cyclical variation. This leads one to conclude that the decline in gross job gains and the increase in gross job losses that occurred during the 2001 recession are most pronounced among the establishments that gained or lost 20 or more jobs.

To quantify this conclusion, note that seasonally adjusted quarterly gross job gains fell from 8.5 million in the first quarter of 2001 to 7.6 million in the fourth quarter of 2001. Slightly less than two-thirds of this decline (61 percent) is attributable to establishments that gained 20

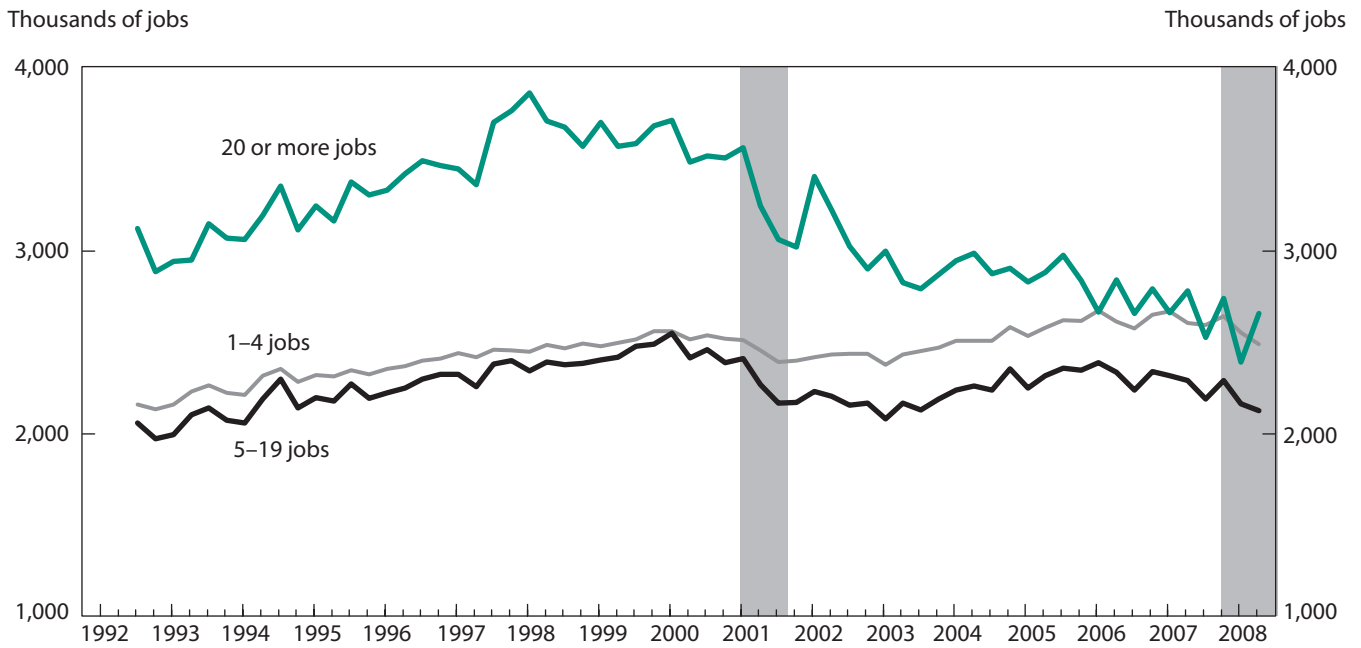| Table 1.	Gross job gains and gross job losses and numbers of establishments gaining and losing jobs, by size of employment change, second quarter 2008, seasonally adjusted				
(Numbers in thouands)					
	Gross job gains		Gross job losses		
	Number	Percent	Number	Percent	
Total...	7,275	100.0	7,771	100.0	
1–4 jobs	2,490	34.2	2,755	35.5	
5–19 jobs.....................................	2,125	29.2	2,365	30.4	
20 or more jobs.........................	2,660	36.6	2,651	34.1	
	Establishments gaining jobs		Establishments losing jobs		
	Number	Percent	Number	Percent	
Total...	1,827	100.0	2,023	100.0	
1–4 jobs	1,535	84.0	1,691	83.6	
5–19 jobs.....................................	251	13.7	282	13.9	
20 or more jobs.........................	41	2.2	50	2.5	

Chart 3. Gross job gains and number of establishments gaining jobs, by size of employment change, second quarter 2008, seasonally adjusted

(In thousands)   (In thousands)
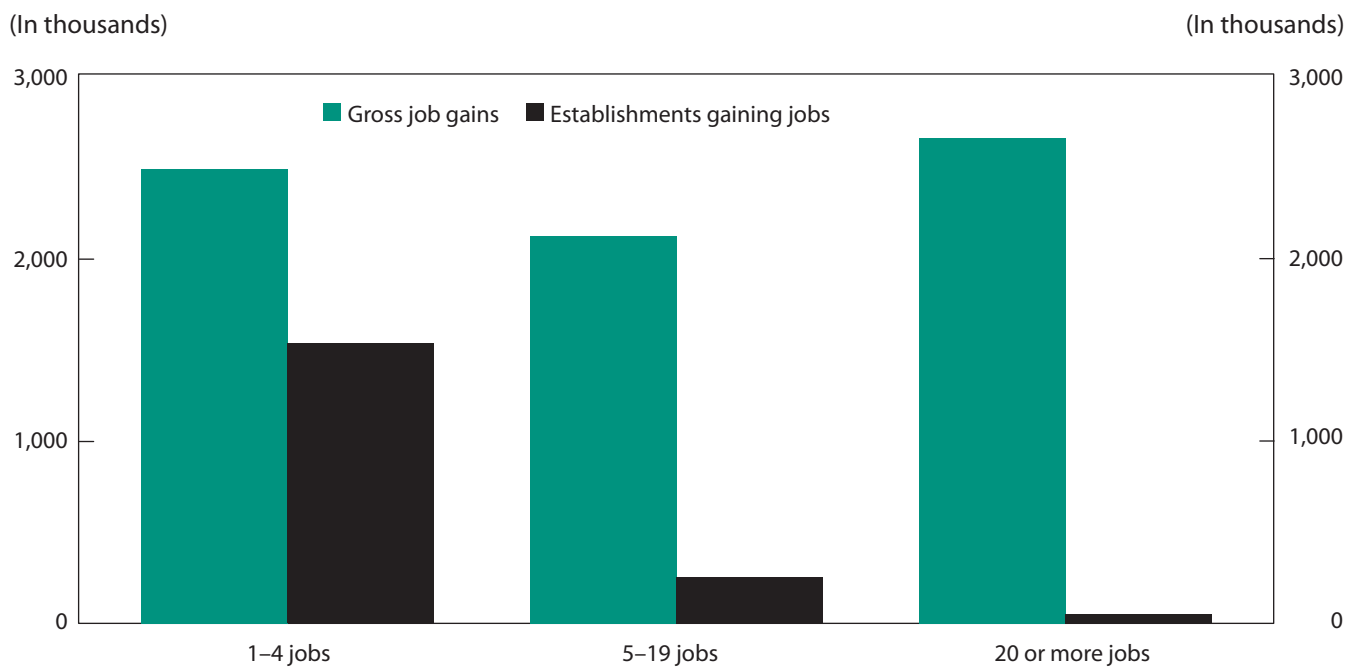
Chart 4. Gross job losses and number of establishments losing jobs, by size of employment change, second quarter 2008, seasonally adjusted
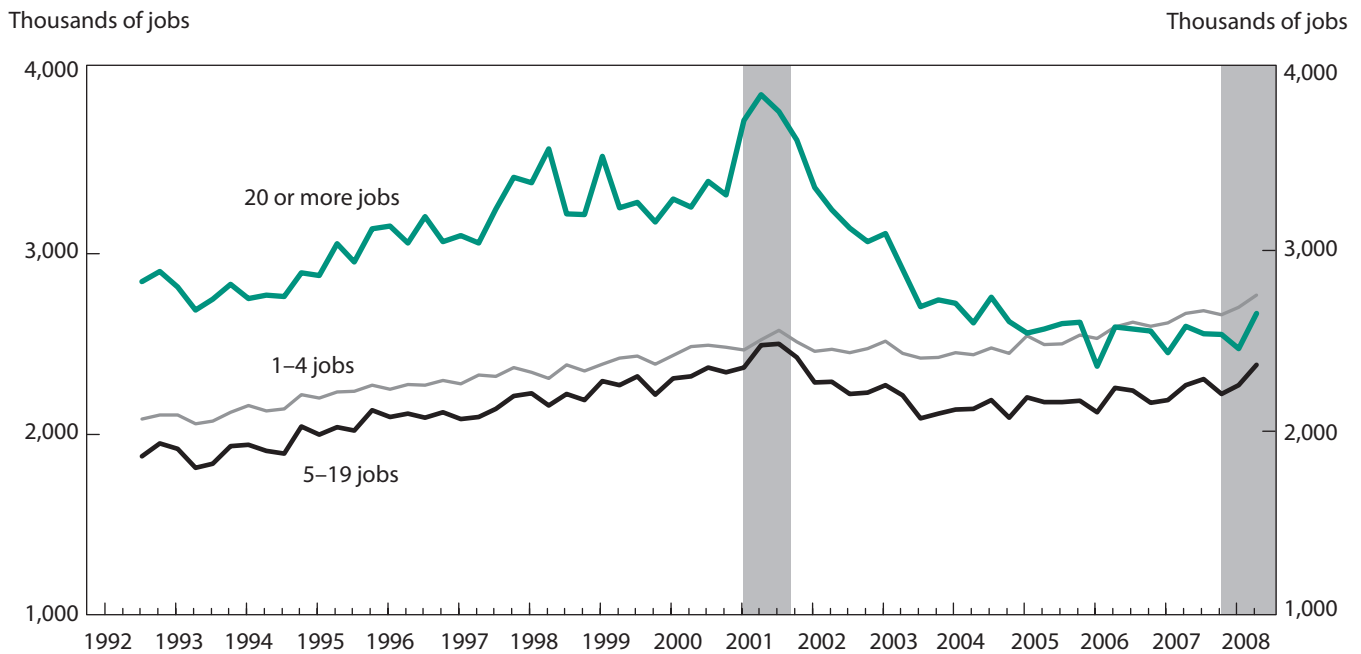
(In thousands)   (In thousands)
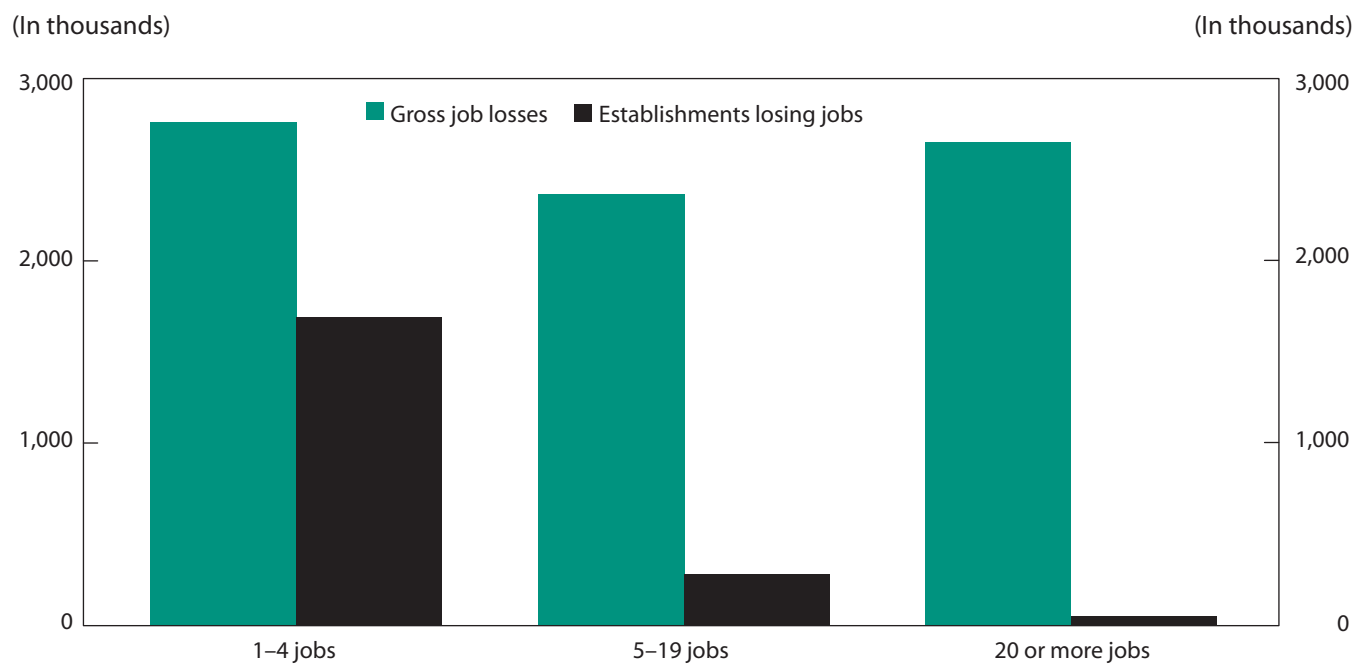
Chart 5. Gross job gains by size of employment change, third quarter 1992 through second quarter 2008, seasonally adjusted

Thousands of jobs   Thousands of jobs

NOTE: The first quarter of each year ends in March, and the first quarter's endpoint is represented by the year's long tick mark. The shorter tick marks represent the endpoints of the second, third, and fourth quarters. The shaded bars denote National Bureau of Economic Research (NBER)-designated recessions, one running March 2001–November 2001 and the other beginning in December 2007. An endpoint for the more recent recession has yet to be designated.

Chart 6. Gross job losses by size of employment change, third quarter 1992 through second quarter 2008, seasonally adjusted

Thousands of jobs   Thousands of jobs

NOTE: The first quarter of each year ends in March, and the first quarter's endpoint is represented by the year's long tick mark. The shorter tick marks represent the endpoints of the second, third, and fourth quarters. The shaded bars denote National Bureau of Economic Research (NBER)-designated recessions, one running March 2001–November 2001 and the other beginning in December 2007. An endpoint for the more recent recession has yet to be designated.

or more jobs. Similarly, the number of seasonally adjusted quarterly gross job losses rose from 8.1 million in the fourth quarter of 2000 to 8.8 million in the third quarter of 2001. Roughly two-thirds of this increase (65 percent) is attributable to establishments that lost 20 or more jobs.

Further analysis. Although this article focuses mainly on the three size-of-employment-change categories mentioned previously, the authors did take a closer look at each of the 19 original categories. The group of establishments that gained or lost exactly one job during a quarter exhibits some intriguing properties that appear to be relevant to the business cycle. The data reveal that prior to the most recent recession (which began in December 2007, as determined by the National Bureau of Economic Research), the category of establishments that gained or lost exactly one job during a quarter was the first group to experience a net employment loss; specifically, losses occurred during the second and third quarters of 2006, as well as all four quarters of 2007. No other size-of-employment-change category had this pattern of losses. All the other categories had net gains in the second quarter of 2006 and all had at least two quarters of positive net gains in 2007. This timing pattern of net losses also occurred heading into the 2001 recession. The

establishments that gained or lost one job over the quarter had their last positive net growth in the second quarter of 2000; all other size-of-employment-change categories did not experience their first net loss until sometime in 2001. It is possible that the establishments that gain or lose exactly one job over the quarter are more sensitive than other establishments to early downward pressures as economic expansions begin to lose their momentum.

Moderation in gross job flows

In comparing the economic expansion of the 1990s with the period from after the 2001 recession to late 2007 and early 2008, the gross job gain and gross job loss data from the BED program exhibit what appears to have been a notable change. The levels of gross job gains and gross job losses prior to the 2001 recession are noticeably higher than the levels following the 2001 recession.[4] This is apparent in chart 2 and even more obvious in chart 7 where seasonally adjusted time series of rates of gross job gains and gross job losses are presented. The chart presents rates rather than levels to control for an increasing employment base over time. From the third quarter of 1992 to the first quarter of 2000, the average gross job gain and gross job loss rates were 8.1 percent and 7.4 percent, respectively.

Chart 7. **Gross job gains and losses as a percent of employment, third quarter 1992 through second quarter 2008, seasonally adjusted**
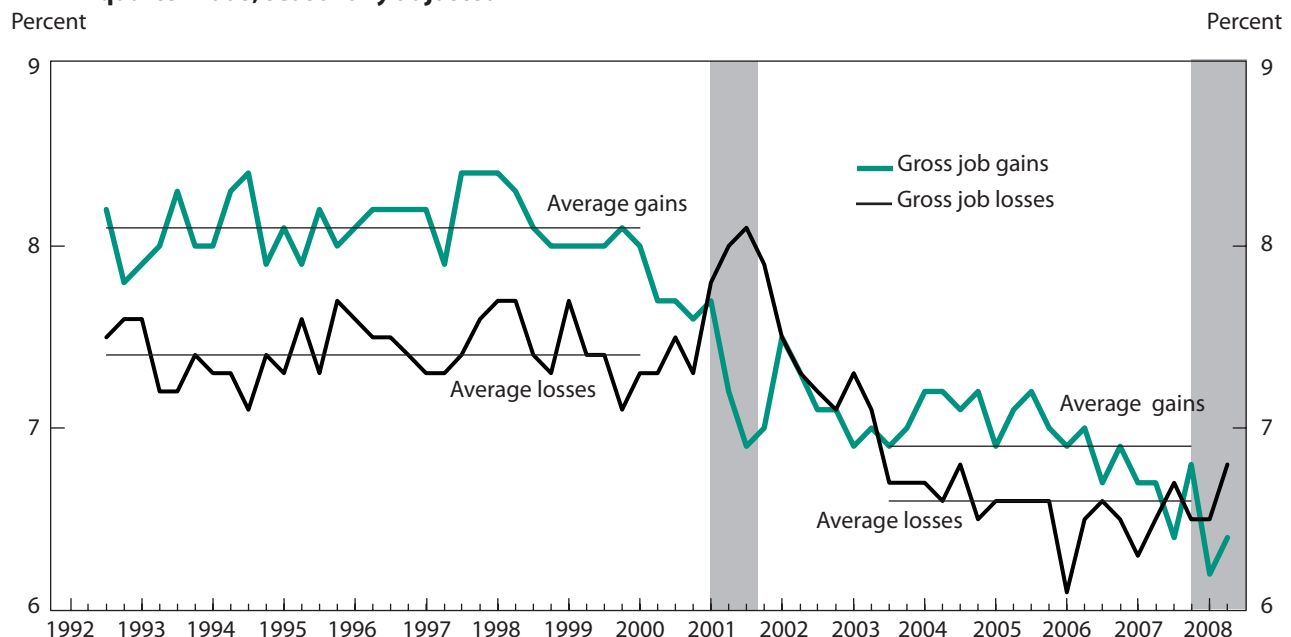
NOTE: The first quarter of each year ends in March, and the first quarter's endpoint is represented by the year's long tick mark. The shorter tick marks represent the endpoints of the second, third, and fourth quarters. The shaded bars denote National Bureau of Economic Research (NBER)-designated recessions, one running March 2001–November 2001 and the other beginning in December 2007. An endpoint for the more recent recession has yet to be designated.

From the third quarter of 2003 to the fourth quarter of 2007, the rates were much lower: the average gross job gain and gross job loss rates were 6.9 percent and 6.6 percent, respectively.[5]

Therefore, there was less establishment-level employment change from mid-2003 through 2007 than there was during the 1990s. On a quarterly basis, relative to the 1990s, fewer jobs were created in the later period from establishments increasing their level of employment, and fewer jobs were lost from establishments decreasing their level of employment. BED statistics suggest that this decrease is due not to fewer establishments changing their employment level, but rather to a smaller average size of change for the establishments that have changed their level of employment. Chart 8 shows the number of establishments gaining jobs and the number of establishments losing jobs, and chart 9 depicts the average size of gains and losses.[6] Chart 8 shows that the number of establishments gaining or losing jobs rose at a steady rate during the 1990s, fell sometime during or immediately following the 2001 recession, and then rose between 2004 and 2007. One may infer from chart 9 that the average quarterly

employment gain or employment loss of an establishment changing its employment level was 4½ jobs during the 1990s and fell fairly steadily following the 2001 recession. In every quarter in 2007 and the first half of 2008, the average quarterly gain or loss of an establishment changing its employment level was less than four jobs.

The size-of-employment-change statistics in charts 5 and 6 strongly suggest where this recent decline in gross job gains and gross job losses has occurred. Concerning data from before and after the 2001 recession, the relatively few establishments that increased or decreased their employment levels by 20 or more jobs in a quarter show a substantial change in gross job gains and gross job losses. In contrast, the jobs gained and lost by the large number of establishments that changed their employment level by just a few jobs have little if any break in trend from before the 2001 recession to after it. Thus, any explanations for the reduced levels of establishment-level employment change in the 2000s relative to the 1990s should focus on the establishments with large quarterly changes in employment.

Table 2 provides further analysis of size-of-employment-

Chart 8. Numbers of establishments gaining and losing jobs, third quarter 1992 through second quarter 2008, seasonally adjusted
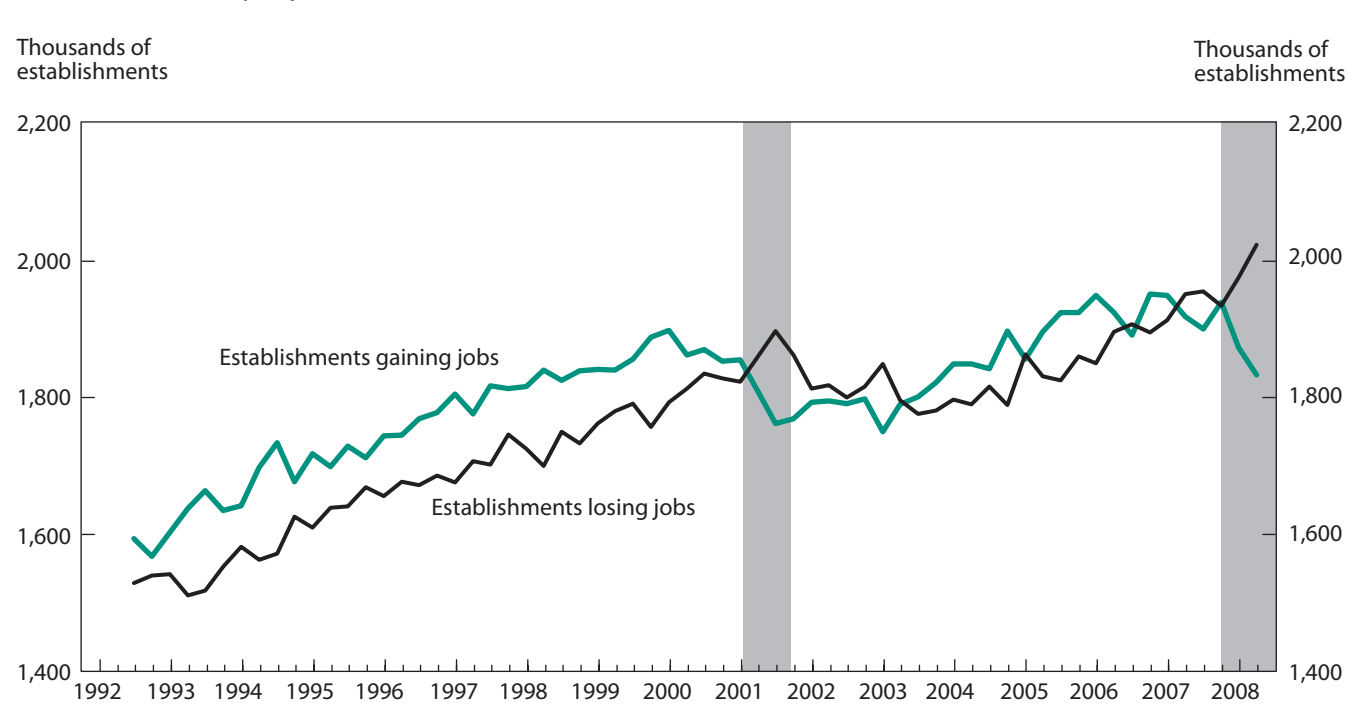
NOTE: The first quarter of each year ends in March, and the first quarter's endpoint is represented by the year's long tick mark. The shorter tick marks represent the endpoints of the second, third, and fourth quarters. The shaded bars denote National Bureau of Economic Research (NBER)-designated recessions, one running March 2001–November 2001 and the other beginning in December 2007. An endpoint for the more recent recession has yet to be designated.

Chart 9. Average size of gain for establishments gaining jobs, and average size of loss for establishments losing jobs, third quarter 1992 through second quarter 2008, seasonally adjusted
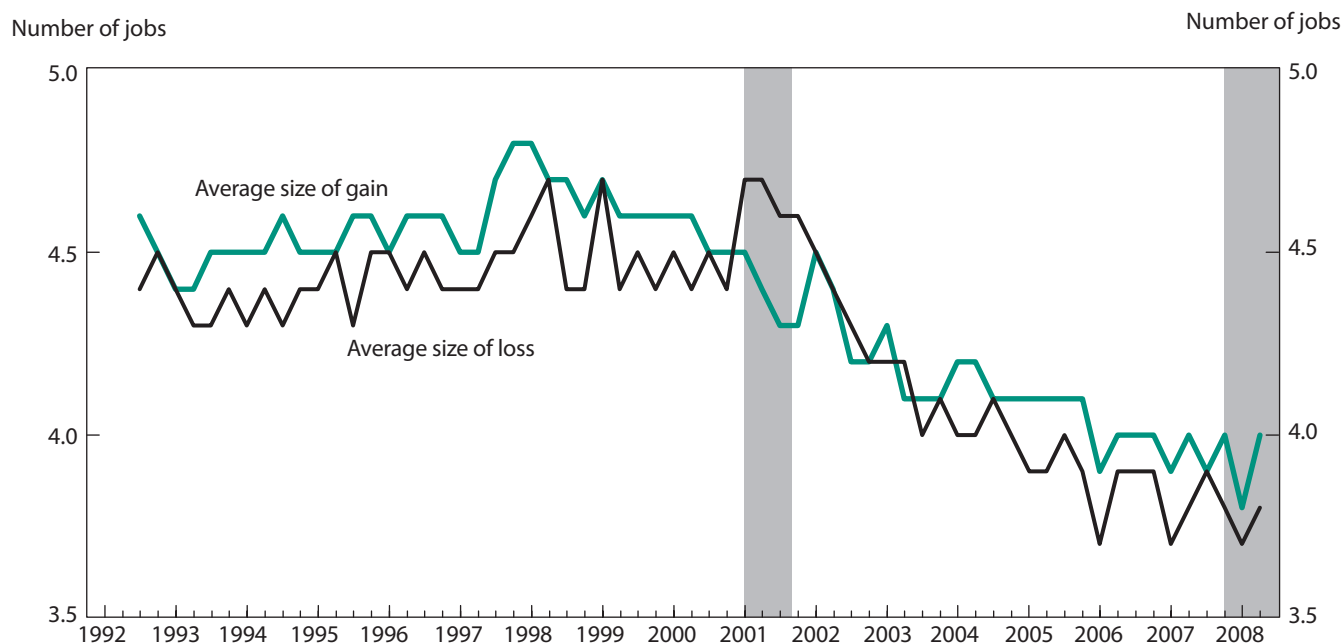
Number of jobs

Number of jobs

Average size of gain

Average size of loss

NOTE: The first quarter of each year ends in March, and the first quarter's endpoint is represented by the year's long tick mark. The shorter tick marks represent the endpoints of the second, third, and fourth quarters. The shaded bars denote National Bureau of Economic Research (NBER)-designated recessions, one running March 2001–November 2001 and the other beginning in December 2007. An endpoint for the more recent recession has yet to be designated.

change statistics in an attempt to determine the source of the moderation in gross job gains and gross job losses.[7] One goal is to learn whether the reduced levels of employment change are found in the group of establishments that are gaining or losing 20–49 jobs, in the establishments that are gaining or losing 50–99 jobs, or in the establishments that are gaining or losing 100 or more jobs. Moreover, if the reduced levels are concentrated in one of these size-of-employment-change categories, this raises the question of whether the reduction originates from establishments that are expanding and contracting or from establishments that are opening and closing.

Table 2 shows empirically that the recent moderation in gross job gains has occurred primarily amongst those establishments gaining 20 or more jobs in a given quarter. From the second quarter of 1995 to the first quarter of 2000, establishments gaining 20 or more jobs added an average of 3.6 million jobs per quarter, whereas from the third quarter of 2003 to the second quarter of 2008, establishments gaining 20 or more jobs added an average of 2.8 million jobs per quarter.[8] The difference between these two statistics is 767,000 jobs, which is much higher than the difference of 79,000 for establishments gaining

5–19 jobs and also much higher than the difference for establishments gaining 1–4 jobs. Table 2 also specifically considers the establishments gaining 20 or more jobs and decomposes the trend difference into that attributable to establishments gaining 20–49 jobs, establishments gaining 50–99 jobs, and establishments gaining 100 or more jobs. Almost two-thirds of the difference (63.8 percent) results from the establishments gaining 100 or more jobs in a quarter. Thus, much of the moderation in gross job gains is due to decreased gross job gains for the establishments that gained 100 or more jobs in a quarter. From the second quarter of 1995 to the first quarter of 2000, these establishments gained 1.5 million jobs in the average quarter, whereas from the third quarter of 2003 to the second quarter of 2008, these establishments gained 1.0 million jobs in the average quarter.

Statistics for the largest size-of-employment-change category are decomposed further into the gross job gains attributable to expansions and those attributable to openings. In the average quarter prior to the 2001 recession, establishments that expanded by 100 or more employees gained 1.1 million jobs, and establishments that opened with 100 or more employees gained 416,000 jobs. (See

Table 2.	Gross job gains and gross job losses, by size of employment change and by timespan, seasonally adjusted			
(Numbers in thousands)				
Size of employment change	Average gross job *gains* prior to the 2001 recession (1995 quarter II–2000 quarter I)	Average gross job *gains* after the 2001 recession (2003 quarter III–2008 quarter II)	Difference	Percent of total difference
Total..	8,339	7,627	713	100.0
1–4 jobs	2,441	2,574	–133	–18.6
5–19 jobs..	2,348	2,269	79	11.0
20 or more jobs..	3,550	2,783	767	107.6
20–49 jobs	1,274	1,125	150	21.0
50–99 jobs..	758	631	127	17.8
100 or more jobs...	1,518	1,028	490	68.7
Job gains from expansions...............................	1,101	864	238	33.4
Job gains from openings..................................	416	164	252	35.3
Size of employment change	Average gross job *losses* prior to the 2001 recession (1995 quarter II–2000 quarter I)	Average gross job *losses* after the 2001 recession (2003 quarter III–2008 quarter II)	Difference	Percent of total difference
Total..	7,668	7,305	363	100.0
1–4 jobs	2,312	2,543	–231	–63.7
5–19 jobs..	2,151	2,180	–29	–8.1
20 or more jobs..	3,205	2,582	624	171.8
20–49 jobs	1,161	1,068	92	25.3
50–99 jobs	677	576	101	27.8
100 or more jobs	1,368	938	430	118.5
Job losses from contractions	1,011	776	235	64.7
Job losses from closings..................................	356	162	195	53.7

table 2.) Both of these gross job gain statistics were lower in the average quarter following the recession: the number of jobs resulting from expansions fell from 1.1 million to 864,000, and the number of jobs resulting from openings fell from 416,000 to 164,000. Thus, the moderation in gross job gains is mostly due to establishments that gained 100 or more jobs in a quarter; amongst this group of establishments, the decline is almost equally attributable to a decline in job gains at expanding establishments and a decline in job gains at opening establishments. (Expanding establishments and opening establishments were responsible for 48.5 percent and 51.4 percent of the decline, respectively.)

A similar conclusion holds for gross job losses. (See table 2.) Much of the moderation in gross job losses is attributable to establishments that lost more than 100 jobs in a quarter. Among this group of establishments, the decline is attributable to both a decrease in job losses at

contracting establishments and a decrease in the number of jobs lost at establishments that closed.

It must be asked whether the moderation amongst the establishments that gained or lost 100 or more jobs in a quarter represents a true economic change or whether any of the moderation is the result of increased data quality. The data-quality hypothesis appears particularly plausible with regard to the declines in the large openings and closings. The QCEW program, which is the source of BED data, is continually improving the quality of its microdata. The BED program also has made several recent improvements in microdata linkages. After a thorough review, the authors of this article have determined that the timing of recent data improvement initiatives is not related to the timing of the moderation in the BED statistics. Thus, it appears that the recent moderation in gross job gain and gross job loss statistics is an economic phenomenon. There is literature that attempts to explain a related phenom-

enon, which some call "the great moderation"; the hypotheses put forward for the great moderation might also help explain the moderation in gross job gains and gross losses that is evident in chart 7.[9] Although any empirical analysis that attempts to distinguish amongst these hypotheses is beyond the scope of this article, BED size-of-employment-change data can serve as an additional tool to help economists analyze the moderation along with other changes in the macroeconomy.

BED SIZE-OF-EMPLOYMENT-CHANGE DATA quantify the distributions of quarterly gross job gains and gross job losses by the size of the change in employment. The data show that approximately one-third of gross job gains and gross job losses originate from a large number of establishments that changed their employment level by 1–4 employees, while approximately one-third of gross job gains and gross job losses originate from a relatively small number of establishments that changed their level of employment by 20 or more jobs. The seasonally adjusted time series data show that the increase in gross job losses that came about during the 2001 recession did not occur because many establishments had small declines in employment, but rather because a relatively small number of establishments experienced sizeable declines in employment. Similarly, the substantial decline in gross job gains that transpired during the 2001 recession did not occur because many establishments made small cutbacks to hiring, but rather because relatively few establishments cut back significantly on their hiring. BED size-of-employment-change data also show that the moderation in gross job gains and gross job losses that occurred from the end of the 2001 recession to mid-2008 (as compared with the gains and losses of the economic expansion of the 1990s) is primarily due to the small number of establishments that gained or lost a large number of jobs in a quarter. It is expected that BED size-of-employment-change data will continue to be valuable for economists and policymakers interested in understanding the dynamics of the U.S. labor market.　　　　□

NOTES

[1] Size-of-employment-change statistics are available at the BED website at www.bls.gov/bdm/bdsoc.htm (visited April 9, 2009).

[2] For a more thorough description of the concepts and definitions, the source data, and the longitudinal linkages in the BED program, see James R. 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.

[3] The data for the 19 categories are available from the BED website: www.bls.gov/bdm/bdsoc.htm. Both seasonally adjusted and unadjusted data are available for jobs gained and lost and for the numbers of establishments gaining and losing jobs. Data on expansions, openings, total gross job gains, contractions, closings, and total gross job losses are available. For a mathematical derivation of size-of-employment-change statistics, see Richard L. Clayton and James R. Spletzer, "Business employment dynamics," in Timothy Dunne, J. Bradford Jensen, and Mark J. Roberts, ed., *Producer Dynamics*, (Chicago, University of Chicago Press, 2009), chapter 4.

[4] This finding has not been altered by the entry of the economy into recession in 2008. The finding is based upon BED data going through the second quarter of 2008, which are the most current data as of this writing.

[5] The authors acknowledge that the periods chosen (third quarter 1992 to first quarter 2000 and third quarter 2003 to fourth quarter 2007) do not correspond to the NBER-determined starting points and endpoints for recessionary periods. The authors chose the aforementioned quarters on the basis of an analysis of charts 2 and 7. In chart 2, for example, gross job gains rise steadily through the first quarter of 2000. The second quarter of 2000 exhibits a sharp decline in gross job gains, and the third and fourth quarters of 2000 do not revert to the 1990s trend of rising gross job gains. Thus, there was an obvious break in the series between the first quarter and the second quarter of 2000. Bearing in mind that it is desirable to calculate an average gross job gains rate that summarizes the expansionary period of the 1990s, the data in charts 2 and 7 suggest that the second, third, and fourth quarters of 2000 should not be included in the calculation.

[6] In Chart 9, the average size of gains for establishments gaining jobs is computed by dividing the total gross job gains in a given quarter by the number of expanding and opening establishments in that quarter. Similarly, the average size of losses for establishments losing jobs is computed by dividing the total gross job losses by the number of contracting and closing establishments.

[7] The statistics in table 2 are tabulated from data downloaded from the BED website at www.bls.gov/bdm/bdsoc.htm.

[8] See endnote 5 for an explanation of why the first quarter of 2000 was chosen as the endpoint of the earlier period used for comparison. Using the same line of reasoning, the third quarter of 2003 was chosen as the starting point of the later period used for comparison. The most recent statistics go through mid-2008, creating a 5-year window of data. To construct a comparable 5-year period, the second quarter of 1995 was chosen as the beginning of the earlier period.

[9] The great moderation refers to the decline in variability of output and inflation that began in the mid-1980s. For a summary of the literature, see Ben S. Bernanke, "The Great Moderation." Speech given at the Meetings of the Eastern Economic Association, Washington, DC, Feb. 20, 2004. Available online at www.federalreserve.gov/BOARDDOCS/SPEECHES/2004/20040220/default.htm (visited April 9, 2009).