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**JOB CREATION AND DESTRUCTION IN SMALL AND MEDIUM-SIZED
ENTERPRISES IN THE UNITED STATES**

Invited paper submitted by the United States Bureau of Labor Statistics*

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The views and opinions expressed in this paper are solely those of its authors and in no way represent those of the Bureau of Labor Statistics.

Introduction

The development of the BLS Business Employment Dynamics data was motivated in large part by research in the academic community. The creation of longitudinal establishment datasets at the U.S. Census Bureau during the past several decades led to influential publications by Dunne, Roberts and Samuelson (1988, 1989a, 1989b), Davis and Haltiwanger (1990, 1992), and Davis, Haltiwanger, and Schuh (1996). From this literature, we have learned that there is a large amount of establishment level employment volatility not evident at the aggregate level, and the gross job flow statistics have fascinating business cycle properties. Yet despite all that we have learned about the labor market from this literature, the empirical analysis in these papers was restricted to data from the manufacturing sector, and the call for more comprehensive data always resonates. The second generation of analysis using longitudinal microdata from the States' unemployment insurance systems illustrates how gross job flows in manufacturing are not representative of the entire U.S. economy—see Anderson and Meyer (1994), Foote (1998), Burgess, Lane, and Stevens (2000), and Spletzer (2000). The research resulting from the creation of these longitudinal establishment datasets has not only stimulated the review and updating of existing labor market theories, but has also stimulated the U.S. statistical agencies to develop their administrative datasets in such a way so as to produce longitudinal job flow statistics. Business Employment Dynamics job flow statistics were first published in September 2003 and have been updated quarterly. Since then, BLS has expanded the dataset to include NAICS sector data.

The measurement of employment generated from small and medium-sized enterprises in the United States is of long-standing interest to both policy makers and economists since they are viewed by many as a source of flexibility and innovation, both in terms of the number of enterprises and the jobs created. This paper describes the methodological issues related to the size class debate and offers some insights for how best to generate job creation and destruction data. The Quarterly Census of Employment and Wages (QCEW) program intends to publish size class data in late 2005 as its next extension of the Business Employment Dynamics (BED) data. These methodological issues influence the calculation of BED size class data and produce different interpretations of employment growth.

In this paper we present alternative methods for estimating job creation and destruction for small and medium-sized enterprises using base sizing, mean sizing, and end sizing as described by Okolie (2004) which builds on the work of Davis, Haltiwanger and Schuh (1996). We also discuss the strengths and weakness of these methods and discuss momentary sizing, as detailed in Davidsson (1996).

The first section of this paper defines job creation and destruction. Using the Business Employment Dynamics terminology, job creation is equivalent to gross job gains while job destruction is equivalent to gross job losses. (We will use the BED terminology from this point forward). The second section describes the administrative source data and the algorithm used to longitudinally link the microdata and create enterprise data. The third section defines the various methods for determining size class and discusses the advantages and disadvantages of each. We pay particular attention to the issues mentioned by Davis (1996) such as the size distribution fallacy and the regression fallacy. The next section concludes with a brief profile of cross sectional size class data from the QCEW business register. We conclude with a discussion on the future expansion of this rich data set and looks at expanding this data to geographic profiles such as state, county, and metropolitan statistical area; looking at single location enterprises compared to enterprises with multiple units; and profiling an age of firm analysis.

1. Concepts and Definitions

A change in aggregate employment from one quarter to the next is the net result of the millions of business establishments in the U.S. economy changing their specific employment levels. Each decision reflects the business-specific economic conditions of supply, demand, labor availability, market share goals, investments in research and development, etc. that face managers every day. While this aggregate net change identifies the overall growth or decline of the labor market, it does not summarize the underlying heterogeneity of the many establishments opening and expanding, or the many establishments contracting or closing. Statistics on gross job gains and gross job losses aggregate the establishment-level employment changes in such a way that one can observe and assess the underlying dynamics.

The BLS uses the following definitions of gross job gains and gross job losses. Gross job gains are the sum of all employment increases at either opening or expanding establishments. An opening establishment is one that has positive employment in the current quarter, and either had zero employment or was not in the database the previous quarter. An expanding establishment is a continuous unit that increases its employment from a positive level in the previous quarter to a higher level in the current quarter. Gross job losses are the sum of all employment losses at either closing or contracting establishments. A closing establishment is one that had positive employment in the previous quarter, and has either zero employment or is not in the database the current quarter. A contracting establishment is a continuous unit that decreases its employment from the previous quarter to a lower positive level in the current quarter. The familiar net change in employment is the difference between the gross jobs gained and the gross jobs lost.

Because it is not possible to define business deaths on a contemporaneous basis, the definitions of establishment openings and closings used in the BLS Business Employment Dynamics program are conceptually different than the more familiar definitions of establishment births and deaths. In the State UI systems, businesses are allowed to and often do report zero employment for several quarters after they have

effectively closed. This undoubtedly occurs when a business owner temporarily shuts down but anticipates starting up the business again when economic conditions improve. By reporting zero employment and wages on the quarterly contributions form, the business owner can keep their UI account active. This results in many observed business closings, but which of these closings will start up again and which will die is not observed for several more quarters. Although deaths cannot be defined contemporaneously in the BLS Business Employment Dynamics press releases, it is possible to define births and deaths in the historical microdata.

Many establishments do not change their level of employment from one quarter to the next. Between the first and second quarters of 2003, 3.1 million establishments in the U.S. economy with positive employment did not change their employment levels from one quarter to the next. These establishments that keep their employment constant do not contribute to the counts of either gross job gains or gross job losses. However, these establishments and their employment levels are included in the count of the total number of establishments and the aggregate level of employment.

The BLS expresses estimates of gross job gains and gross job losses in rates by dividing them by the average of the current and previous quarters' employment. This provides a symmetric growth rate. One can add and subtract these rates just as one can the levels. For instance, the net growth rate is the difference between the gross job gains rate and the gross job losses rate. An example from the most recent data available can help define the concepts of gross job gains and gross job losses (see Appendix A).

Gross job gains and gross job losses are the sum of net changes in employment at the establishment level, and are referred to collectively as gross job flows. If an establishment increases employment from 100 workers to 120 workers, these 20 additional jobs are classified as gross job gains. This count of gross job gains does not measure the dynamics of workers into and out of jobs in the establishment. For example, the addition of 20 jobs during the quarter might have occurred with the addition of 20 new hires, or by the net of 30 new hires and 10 separations. Counts of hires and separations, referred to as worker flows, are published monthly by the Job Openings and Labor Turnover Survey (JOLTS) program at the BLS.

2. The Source Data

The source of the data used for constructing the new BLS Business Employment Dynamics data series is the Quarterly Census of Employment and Wages (QCEW), also known as the ES-202 program. The data gathered in the QCEW program are a comprehensive and accurate source of employment and wages, and provide a virtual census (98%) of employees on nonfarm payrolls. In the second quarter of 2003, the QCEW statistics show an employment level of 129.2 million, with 8.2 million establishments in the U.S. economy. The QCEW data are derived from quarterly Unemployment Insurance (UI) administrative microdata. All employers subject to state UI laws are required to submit quarterly contribution reports detailing their monthly employment and quarterly wages to the State Employment Security Agencies. After the

microdata are edited and, if necessary, corrected by the State Labor Market Information staff, the states submit these data and other business identification information to the Bureau of Labor Statistics as part of the federal-state cooperative QCEW program.

Since the gross job gains and gross job loss statistics are defined from the establishment level employment changes, it is important to mention the definitions of establishments and employment in the QCEW program. An establishment is defined as an economic unit that produces goods or services, and an establishment is usually a physical location engaged in one or predominantly one type of economic activity. This definition of an establishment is different from the definition of a firm or a company which may consist of one or more establishments at several locations. The BLS, in cooperation with the States, takes many steps to ensure that employers with multiple establishments in the state report employment and wage data for specific establishments. Employment is defined as the number of covered workers (whose wages are subject to UI taxes) who earned wages during the pay period which includes the 12th of the month. The quarterly UI microdata contain information on monthly employment; the gross job gains and gross job loss statistics use employment in the third month of the quarter as the measure of the establishment's quarterly employment.

The gross job gains and gross job loss statistics published by the BLS are derived from a subset of the establishments in the QCEW data. Government establishments are excluded, as are private households (NAICS 814110), and establishments with zero employment in two consecutive quarters are also excluded. Establishments in Puerto Rico and the Virgin Islands also are excluded.

We construct enterprise data by summing up the establishment employment by the Federal Employer Identification Number (EIN). The EIN is a good proxy for firm data, we use this level of data as the building block for analyzing small and medium sized firms.

3. The Linkage Methodology

Following establishments across time using administrative UI microdata is a complex and challenging exercise. Creating the business employment dynamics data series requires a thorough understanding of how businesses operate and how they file their UI tax forms. The manner in which businesses report administrative changes and ownership changes can result in establishments changing UI identifiers even though no economic changes occurred. Failing to capture and link such non-economic changes would result in an overstatement of establishment openings and closings, and thus an overstatement of job turnover in the economy. The BLS has developed a multi-step process to accurately link business establishment data over time. This linkage process consists of four steps: two distinct administrative matches, a probability-based weighted match, and an analyst intervention match.

The linkage process is based on the unique establishment identifier maintained by the States. The first step is to link establishments that maintain the same identifier across

quarters. This is followed by a match using predecessor and successor information that identifies distinct establishments as continuous across quarters in situations where the UI establishment identifier changes as a result of a change in ownership or a change in the reporting configuration of a multi-establishment company. In most cases, businesses buying another business must report the assumption of liability for UI taxes to the State. These reported linkages are the vast majority of predecessor and successor linkages; others are identified by the State Labor Market Information Staff. The third step in the linkage process, conducted by the BLS, is a probability-based weighted match process. This probability-based weighted match uses information such as establishment name, street address, and telephone number to link, as continuous, a closing establishment in the previous quarter with an opening establishment in the current quarter. The final step in the matching process is an analyst review and possible manual linkage of selected large unmatched records.

4. Methods for Creating Enterprise Size Class Data

The methods generally considered when constructing enterprise size class gross flows are (1) base sizing, where an enterprise's initial employment size determines its size class, (2) end sizing, where an enterprise's most recent employment size determines its size class, (3) mean sizing, where the average employment of the initial and final period determines an enterprise's size class, and (4) momentary sizing, as mentioned in Davidsson (1996). Momentary sizing classifies an enterprise's employment based on its initial employment and distributes the "momentary" gains across different size classes.

The methods of classifying enterprises into size categories can have large effects on Business Employment Dynamics statistics. For enterprises that are growing and that move from one size class category to another, base sizing results in statistics which indicate that employment growth is coming from smaller enterprises, whereas end sizing results in statistics which indicate that employment growth is coming from larger enterprises. Similarly, for enterprises that are contracting and that move from one size class category to another, base sizing results in statistics which indicate that employment decline is coming from larger enterprises, whereas end sizing results in statistics which indicate that employment decline is coming from smaller enterprises. Economists refer to this statistical phenomenon as the "regression fallacy" or "regression-to-the-mean" bias. The essence of the regression fallacy is that extreme examples, over time, can only move in one direction towards the mean. In this context, the purported bias is that small enterprises have an upward bias creating jobs under the base method, while larger enterprises have a downward bias. The purported bias is the reverse under the end method.

The "size distribution fallacy" occurs when a large firm decreases its employment and is subsequently reclassified as a small firm; all else constant, employment in small firms increases while employment in large firms decreases (Davis et al 1996). Static snapshots of employment size class data therefore, cannot be used as a basis for determining job creation or destruction by size class. Like Davidsson (1996), we find this fallacy to be of little concern. We observe that small firms that are experiencing growth end up as large

firms, either through mergers or acquisitions, or organic growth through the market forces of supply and demand. Thus, static snapshots of employment size class data are actually biased against small firms, as these firms mature and grow larger.

Base sizing measures where job growth originates. It also has the property of capturing the organic growth process of small enterprises which are either acquired by larger firms or continue to grow as they respond to market conditions. By capturing where the job growth originates, this method attributes most of the net employment change to the smaller size classes and less in the larger classes (Okolie, 2004). Base sizing has often been criticized as have a potential regression-to-the-mean bias, but, as yet, we find no evidence of this. A firm that gains 19 employees and starts with 3 employees would have that gain counted in its original size class, 0 to 4 employees (see Figure 1.)

End sizing measures where job growth from an enterprise ends up. It has the property of attributing most of the net employment gains in the larger size classes and the losses in the smaller classes (Okolie, 2004). A disadvantage of this method is simply that time moves forward. As such, this method breaks the elementary principle of getting the time order correct and does not allow for causal analysis of where job growth originates. A firm that gains 19 employees and starts with 3 employees would have that gain counted in its final size class, 20 to 49 employees (see Figure 2.)

Mean sizing measures job growth by classifying an enterprise's average employment between its initial and final employment level. While it is claimed to reduce the regression to the mean bias, we find that it produces other biases that are problematic. We find that this method creates an artificial employment level for an enterprise that never existed and attributes that employment change to a particular size class. Mean sizing smooths employment gains across size classes and distributes gains and losses evenly across size classes. While it does have the desirable property of mitigating the extreme gains and losses of employment attributable to small firms (Okolie, 2004), it lacks the ability to precisely answer where job growth originates. A firm that gains 19 employees and starts with 3 employees would have that gain counted in its "average" size class, 10 to 19 employees (see Figure 3.)

Momentary sizing measures where job growth originates and removes any potential regression to the mean bias as ascribed to base sizing. Momentary sizing allocates an enterprise's employment change to the initial size class and then distributes gains across size classes. For example, if an enterprise grew from three employees (size class one) to 22 employees (size class 4) over the quarter, then one of the gains would be allocated to size class 1, five to size class 2, ten to size class 3, and three to size class 4 (see Figure 4). For comparison, base sizing would classify all of the 19 employee gain to size class 1, mean sizing would place the 19 employee gain in size class 3, and end sizing would place the 19 employee gain in size class 4.

Momentary maintains the elementary principle of getting the time order correct and allows for the causal analysis of where job growth originates. It should be noted that momentary sizing is essentially base sizing for enterprises that have employment changes

within a size class. For those enterprises that have employment changes across size class, gains or losses are distributed across varying size class while maintaining the base measurement. In addition, it does not create an artificial size class like mean sizing.

5. Profile of Cross Section Size Class Data

As of March 2004, approximately 60 percent of establishments had fewer than 5 employees in the QCEW universe and represented less than 8 percent of total employment. When we define small establishments as those with fewer than 20 employees, we find that they account for 85 percent of all establishments and approximately 25 percent of total private employment. An examination of medium sized establishments, from 20 employees to 99, reveals that this cohort represents approximately 10 percent of all establishments and 30 percent of total private employment. Large establishments, with 100 or more employees, represent just under 5 percent of all establishments but account for 45 percent of total employment. As Chart 1 illustrates, there is a direct relationship to the size of the establishment and its contribution to total employment.

The relationship between an establishment's size and its contribution to total wages is similar to its contribution to total private employment, but there is not a definite relationship between size and total wages. Total wages are a function of the establishment's industry, and industry effects tend to dominate the establishment's contribution to total wages (see Chart 2).

Conclusion

BLS plans on generating size class data for release in late 2005. These data will include data for small, medium, and large enterprises and the data will include a historical time series from 1991 through the present with ongoing quarterly updates. The Bureau also plans to release several research papers that will examine this issue in detail which will describe the methodology and review all of the strengths and weaknesses related to alternative size class methods with profiles of the historical data under each method. This paper will describe the Bureau's methodology choice for its official size class methodology.

These new size class statistics will help economists, policy makers, and business leaders better understand the labor market and the U.S. economy. In addition to the national level data described in Appendix A, BLS is also preparing additional data series at more detailed levels. The BLS plans to release gross job gains and gross job loss statistics for industries and geographies, although confidentiality restrictions will determine how much detail can be published. We also plan on producing data for single location firms and compare them to multi-location firms and analyze their employment job creation and destruction patterns over time. Another extension will include analysis job creation and destruction by age of firm. And finally, the BLS is also working on annual, rather than

quarterly, gross job gains and gross job loss statistics, and related issues such as business survival rates.

The development of Business Employment Dynamics is a continuous process. With national data expanding to high industry level, further development is targeted for size class, data for states and counties and further industry detail.

References

Davidsson, Per "Methodological concerns in the estimation of job creation in different firm size classes." Working Paper, Jönköping International Business School, 1996.

Davidsson, P., L. Lindmark & C. Olofsson, 1995c, 'Small Firms, Business Dynamics and Differential Development of Economic Well-being. *Small Business Economics*, 7, 301-315.

Davidsson, Per, Leif Lindmark and Christer Olofsson, 1998, "The Extent of Over-estimation of Small Firm Job Creation," *Small Business Economics*, 11(1), 87-100.

Davis, Steven J., John Haltiwanger and Scott Schuh, 1996, "Small Business and Job Creation: Dissecting the Myth and Reassessing the Facts," *Small Business Economics*, 8(4), 297-315.

Davis, Steven J. and John Haltiwanger. "Gross Job Creation, Gross Job Destruction, and Employment Reallocation," *Quarterly Journal of Economics*, Vol. 57, No. 3, August 1992, pp. 819-863.

Davis, Steven J & Haltiwanger, John & Schuh, Scott, 1996. "Small Business and Job Creation: Dissecting the Myth and Reassessing the Facts," *Small Business Economics*, Springer, vol. 8(4), pages 297-315.

Davis, Steven J., John C. Haltiwanger, and Scott Schuh. *Job Creation and Destruction*. 1996, MIT Press: Cambridge, MA.

Dunne, Timothy, Mark J. Roberts, and Larry Samuelson. "Patterns of Firm Entry and Exit in U.S. Manufacturing Industries." *Rand Journal of Economics*, Vol. 19, No. 4, Winter 1988, pp. 495-515.

Okolie, Cordelia. "Why size class methodology matters in analyses of net and gross job flows." *Monthly Labor Review*, Vol. 127, No. 7, July 2004, pp. 14-23.

Pivetz, Timothy R.; Searson, Michael A. and Spletzer, James R. "Measuring Job Flows and the Life Cycle of Establishments with BLS Longitudinal Establishment Microdata," *Monthly Labor Review*, April 2001, 124(4), pp. 13-20.

Robertson, Kenneth, Larry Huff, Gordon Mikkelson, Timothy Pivetz, and Alice Winkler, "Improvements in Record Linkage Processes for the Bureau of Labor Statistics' Business Establishment List." *Proceedings for the 1997 Record Linkage Workshop and Exposition*, pp. 212-221.

Spletzer, James R., 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, 29-42.

Figure 1. Base Sizing Method

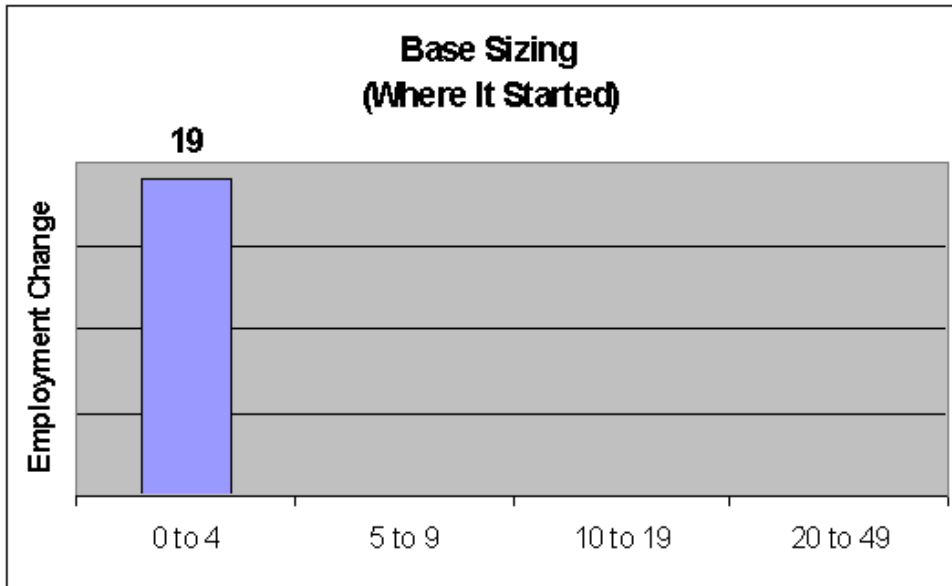


Figure 2. End Sizing Method

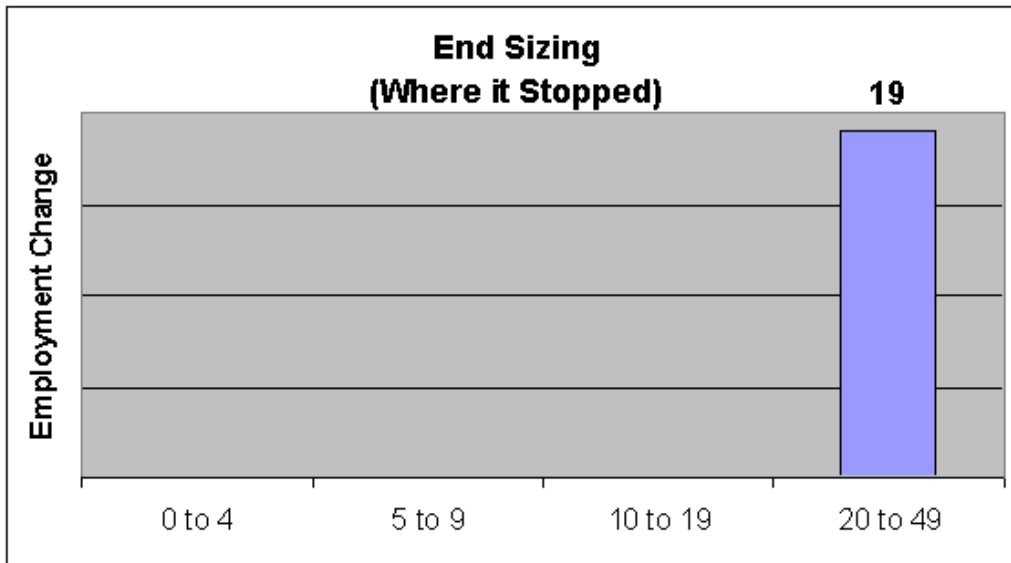


Figure 3. Mean Sizing Method

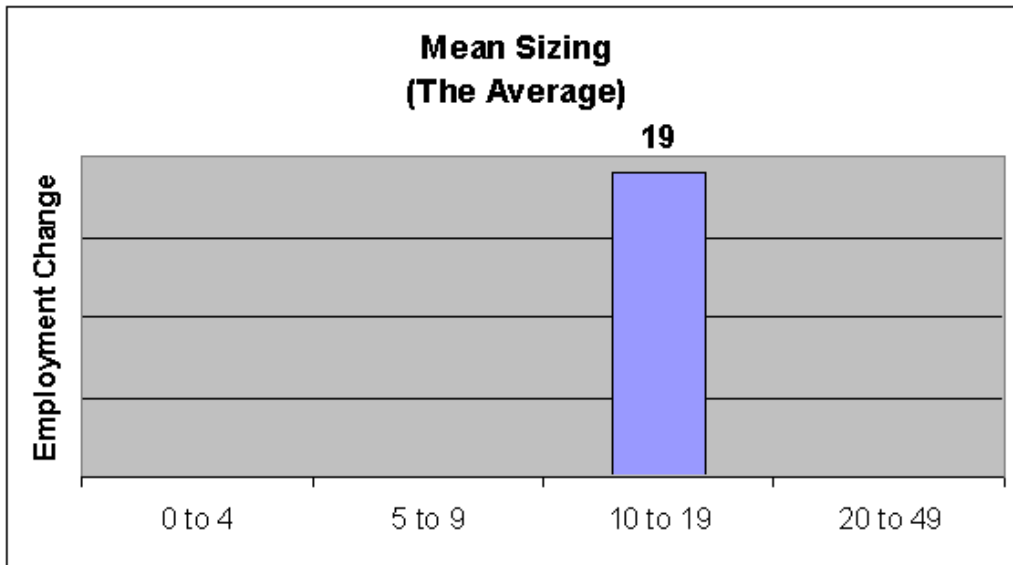


Figure 4. Momentary Sizing Method

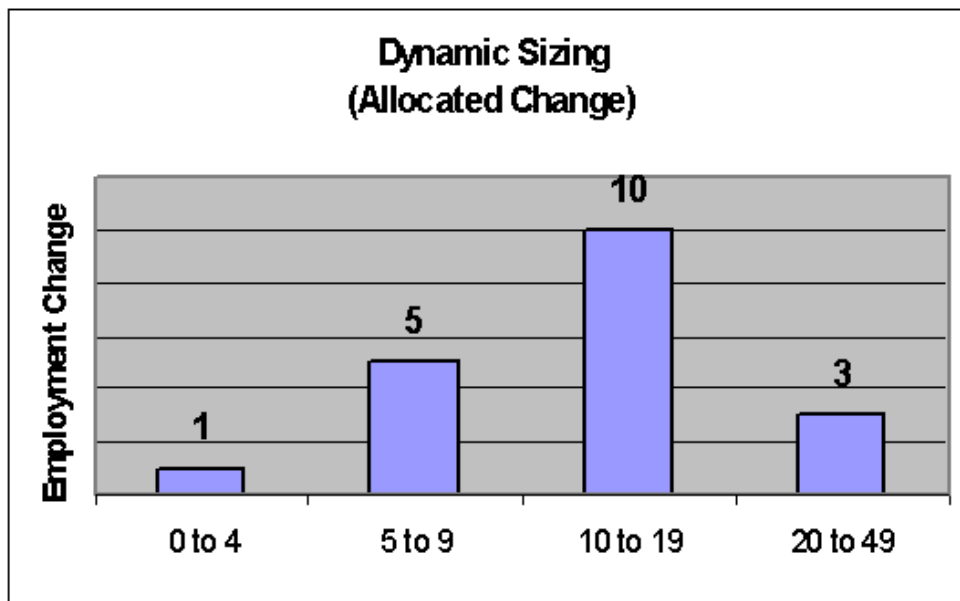


Chart 1. March 2004 Establishment Distribution by Employment Size Class

Percent

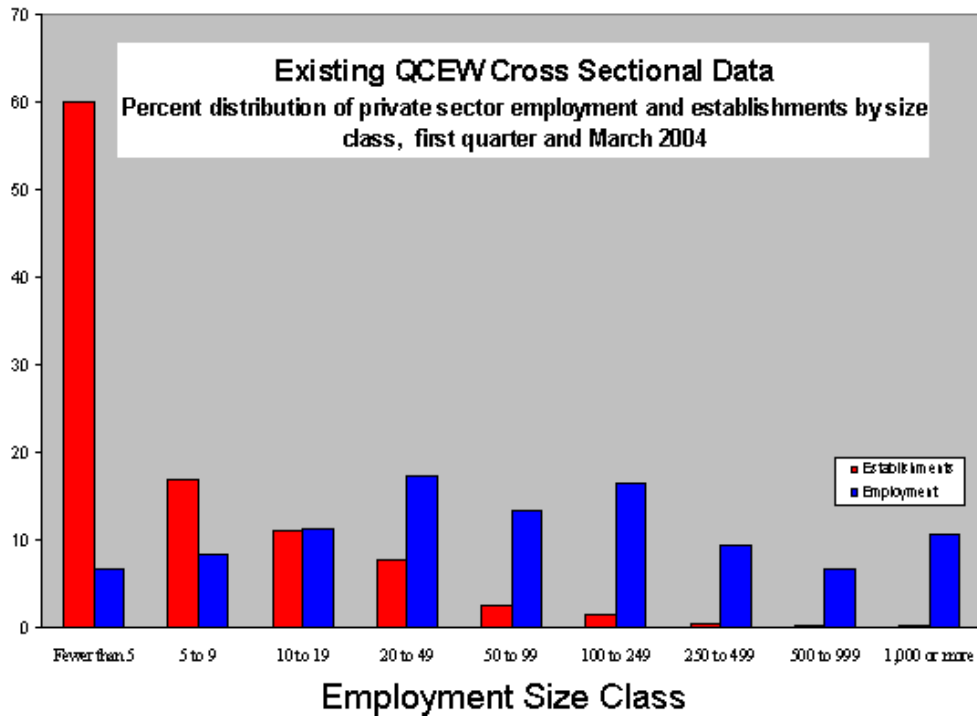


Chart 2. March 2004 Wage Distribution by Establishment Size Class by Industry

Average Weekly Wages (2004Q1) By Size of Establishment

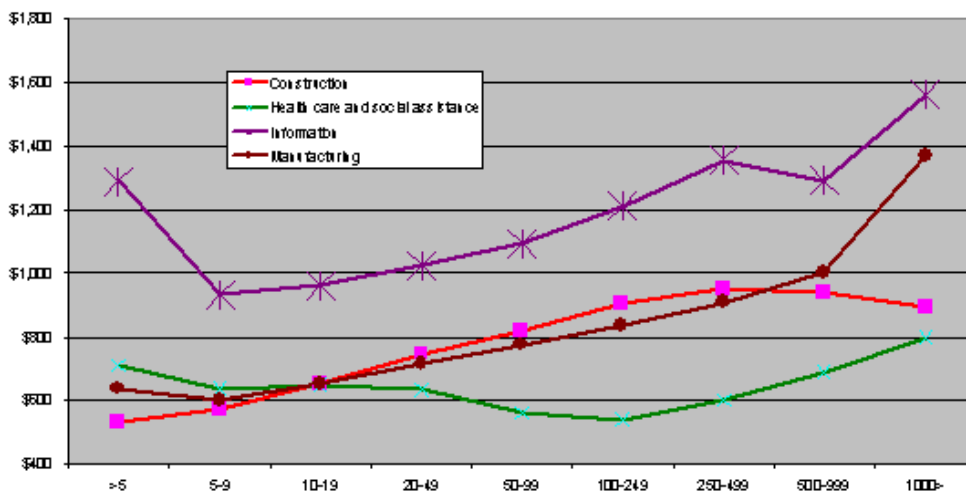


Chart 3. United States Total Private Gross Flows: 1992 -2004

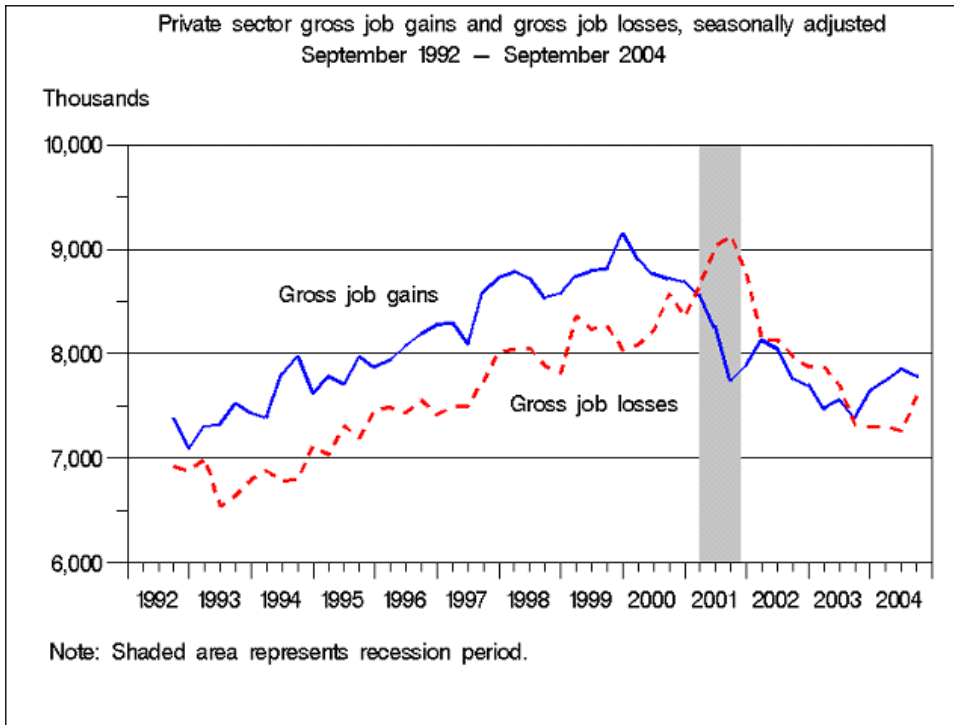
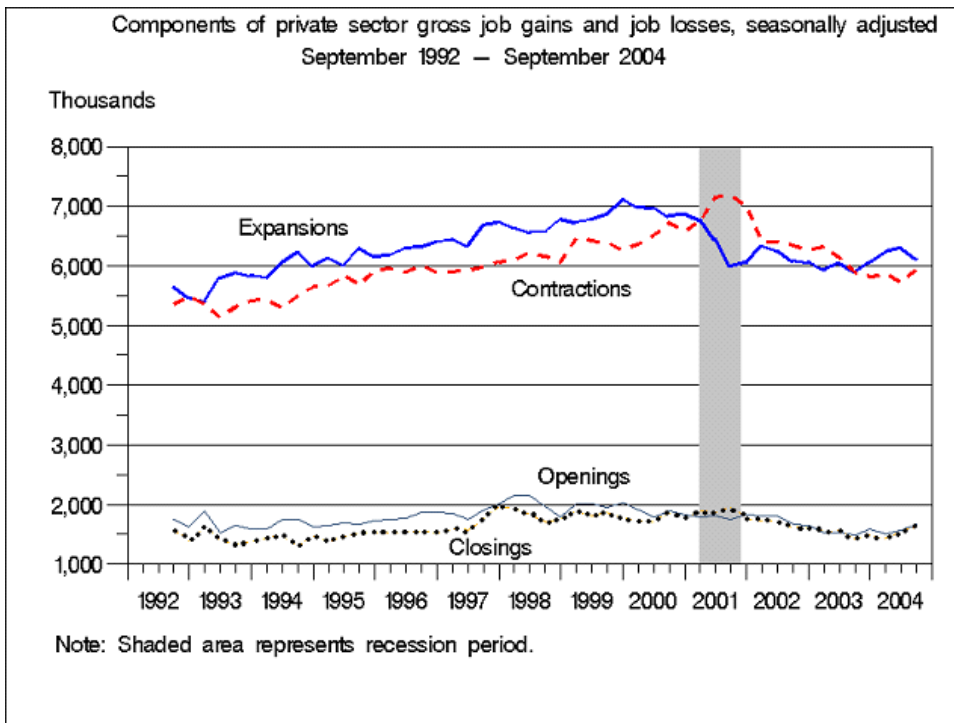


Chart 4. United States Total Private Components of Gross Flows: 1992 -2004



Appendix A. Business Employment Dynamics: Third Quarter 2004

The section describes the existing gross job flows data based on third quarter 2004 data from the most recent press release published by BLS:

From June to September 2004, the number of job gains from opening and expanding private sector establishments was 7.8 million, and the number of job losses from closing and contracting establishments was 7.6 million. The gap between job gains and job losses narrowed during the third quarter of 2004, after widening over the previous four quarters.

Opening and expanding private sector business establishments gained 7.8 million jobs in the third quarter of 2004, or 68,000 less than in the previous quarter. Over the quarter, expanding establishments added 6.1 million jobs, while opening establishments added 1.7 million jobs.

Gross job losses totaled 7.6 million, up by 335,000 from the second quarter of 2004. The increase in gross job losses in the third quarter of 2004 represents a reversal of the downward trend in gross job losses. In the third quarter of 2004, contracting establishments lost 6.0 million jobs, while closing establishments accounted for a loss of 1.6 million jobs. (See tables A, 1, and 3.)

Table A. 3-Month private sector gross job gains and losses, seasonally adjusted

Category	3 months ended				
	Sept. 2003	Dec. 2003	Mar. 2004	June 2004	Sept. 2004
	Levels (in thousands)				
Gross job gains.....	7,396	7,646	7,745	7,857	7,789
At expanding establishments...	5,897	6,063	6,231	6,292	6,123
At opening establishments.....	1,499	1,583	1,514	1,565	1,666
Gross job losses.....	7,324	7,302	7,310	7,263	7,598
At contracting establishments...	5,893	5,816	5,871	5,726	5,953
At closing establishments.....	1,431	1,486	1,439	1,537	1,645
Net employment change ¹	72	344	435	594	191
	Rates (percent)				
Gross job gains.....	6.9	7.2	7.2	7.2	7.2
At expanding establishments...	5.5	5.7	5.8	5.8	5.7
At opening establishments.....	1.4	1.5	1.4	1.4	1.5
Gross job losses.....	6.8	6.8	6.8	6.7	7.0
At contracting establishments...	5.5	5.4	5.5	5.3	5.5
At closing establishments.....	1.3	1.4	1.3	1.4	1.5
Net employment change ¹	0.1	0.4	0.4	0.5	0.2

¹ The net employment change is the difference between total gross job gains and total gross job losses.

From June to September 2004, gross job gains represented 7.2 percent of private sector employment, unchanged from the previous three quarters. Gross job losses were at 7.0 percent of private sector employment, an increase of 0.3 percentage point from the

previous quarter. (See tables A and 2.) These gross job gain and loss statistics demonstrate that a sizable number of jobs appear and disappear in the relatively short time frame of one quarter.

Number of Establishments Gaining and Losing Employment

Another way to look at the dynamics of business activities is to monitor the number and proportion of business units that are growing and declining. In the third quarter of 2004, the number of opening establishments exceeded the number of closing establishments, leading to a net addition of 9,000 units to the number of total active private sector establishments. In addition, the number of establishments gaining jobs continued to surpass the number of establishments losing jobs.

Table C. Number of private sector establishments by direction of employment change, seasonally adjusted
(In thousands)

Category	3 months ended				
	June 2003	Sept. 2003	Dec. 2003	Mar. 2004	June 2004
Establishments gaining jobs...	1,791	1,815	1,854	1,847	1,840
Expanding establishments	1,463	1,467	1,505	1,504	1,486
Opening establishments.	328	348	349	343	354
Establishments losing jobs.....	1,772	1,775	1,794	1,792	1,814
Contracting establishments.	1,454	1,453	1,466	1,462	1,469
Closing establishments.....	318	322	328	330	345
Net establishment change ¹	10	26	21	13	9

¹ The net establishment change is the difference between the number of opening establishments and the number of closing establishments.

Out of 6.5 million active private sector establishments, a total of 1.8 million establishments gained jobs from June to September 2004. (See table C.) Of these, 1.5 million were expanding establishments and 354,000 were opening establishments. During the third quarter of 2004, 1.8 million establishments lost jobs and of these, 1.5 million were contracting establishments and 345,000 were closing establishments.

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Table 1. Private sector gross job gains and job losses, seasonally adjusted
(In thousands)

Year	3 months ended	Net change ¹	Gross job gains			Gross job losses		
			Total	Expanding establishments	Opening establishments	Total	Contracting establishments	Closing establishments
1992	September	455	7,377	5,632	1,745	6,922	5,351	1,571
	December	216	7,101	5,465	1,636	6,885	5,487	1,398
1993	March	313	7,309	5,410	1,899	6,996	5,354	1,642
	June	786	7,330	5,794	1,536	6,544	5,136	1,408
	September	874	7,523	5,881	1,642	6,649	5,316	1,333
	December	641	7,436	5,840	1,596	6,795	5,420	1,375
1994	March	517	7,400	5,807	1,593	6,883	5,435	1,448
	June	1,021	7,807	6,060	1,747	6,786	5,295	1,491
	September	1,175	7,972	6,227	1,745	6,797	5,493	1,304
	December	507	7,630	5,998	1,632	7,123	5,647	1,476
1995	March	746	7,782	6,129	1,653	7,036	5,660	1,376
	June	402	7,714	6,017	1,697	7,312	5,839	1,473
	September	771	7,970	6,291	1,679	7,199	5,680	1,519
	December	407	7,877	6,153	1,724	7,470	5,934	1,536
1996	March	460	7,943	6,190	1,753	7,483	5,957	1,526
	June	642	8,080	6,302	1,778	7,438	5,894	1,544
	September	632	8,189	6,326	1,863	7,557	5,998	1,559
	December	861	8,278	6,409	1,869	7,417	5,889	1,528
1997	March	799	8,292	6,448	1,844	7,493	5,900	1,593
	June	594	8,098	6,342	1,756	7,504	5,925	1,579
	September	854	8,593	6,680	1,913	7,739	5,981	1,758
	December	702	8,731	6,727	2,004	8,029	6,068	1,961
1998	March	747	8,788	6,633	2,155	8,041	6,107	1,934
	June	666	8,722	6,569	2,153	8,056	6,218	1,838
	September	659	8,539	6,574	1,965	7,880	6,161	1,719
	December	759	8,576	6,778	1,798	7,817	6,060	1,757
1999	March	380	8,744	6,733	2,011	8,364	6,466	1,898
	June	569	8,800	6,788	2,012	8,231	6,419	1,812
	September	548	8,817	6,871	1,946	8,269	6,397	1,872
	December	1,105	9,144	7,112	2,032	8,039	6,264	1,775
2000	March	818	8,906	6,988	1,918	8,088	6,361	1,727
	June	541	8,764	6,975	1,789	8,223	6,509	1,714
	September	146	8,724	6,834	1,890	8,578	6,719	1,859
	December	336	8,690	6,862	1,828	8,354	6,582	1,772
2001	March	-101	8,555	6,768	1,787	8,656	6,756	1,900
	June	-771	8,254	6,439	1,815	9,025	7,149	1,876
	September	-1,380	7,749	5,990	1,759	9,129	7,174	1,955
	December	-871	7,893	6,055	1,838	8,764	6,995	1,769
2002	March	-1	8,128	6,324	1,804	8,129	6,400	1,729
	June	-80	8,050	6,246	1,804	8,130	6,411	1,719
	September	-211	7,763	6,083	1,680	7,974	6,345	1,629
	December	-175	7,702	6,059	1,643	7,877	6,267	1,610
2003	March	-404	7,472	5,932	1,540	7,876	6,321	1,555
	June	-142	7,560	6,033	1,527	7,702	6,138	1,564
	September	72	7,396	5,897	1,499	7,324	5,893	1,431
	December	344	7,646	6,063	1,583	7,302	5,816	1,486
2004	March	435	7,745	6,231	1,514	7,310	5,871	1,439
	June	594	7,857	6,292	1,565	7,263	5,726	1,537
	September	191	7,789	6,123	1,666	7,598	5,953	1,645

¹ Net change is the difference between total gross job gains and total gross job losses.

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Table 2. Private sector gross job gains and losses, as a percent of employment¹, seasonally adjusted (Percent)

Year	3 months ended	Net change ²	Gross job gains			Gross job losses		
			Total	Expanding establishments	Opening establishments	Total	Contracting establishments	Closing establishments
1992	September	0.5	8.3	6.3	2.0	7.8	6.0	1.8
	December	0.2	7.9	6.1	1.8	7.7	6.1	1.6
1993	March	0.3	8.1	6.0	2.1	7.8	6.0	1.8
	June	0.8	8.1	6.4	1.7	7.3	5.7	1.6
	September	0.9	8.2	6.4	1.8	7.3	5.8	1.5
	December	0.6	8.0	6.3	1.7	7.4	5.9	1.5
1994	March	0.5	8.0	6.3	1.7	7.5	5.9	1.6
	June	1.1	8.4	6.5	1.9	7.3	5.7	1.6
	September	1.2	8.4	6.6	1.8	7.2	5.8	1.4
	December	0.6	8.0	6.3	1.7	7.4	5.9	1.5
1995	March	0.8	8.1	6.4	1.7	7.3	5.9	1.4
	June	0.5	8.0	6.2	1.8	7.5	6.0	1.5
	September	0.8	8.2	6.5	1.7	7.4	5.8	1.6
	December	0.4	8.1	6.3	1.8	7.7	6.1	1.6
1996	March	0.4	8.1	6.3	1.8	7.7	6.1	1.6
	June	0.6	8.2	6.4	1.8	7.6	6.0	1.6
	September	0.7	8.3	6.4	1.9	7.6	6.0	1.6
	December	0.9	8.3	6.4	1.9	7.4	5.9	1.5
1997	March	0.7	8.2	6.4	1.8	7.5	5.9	1.6
	June	0.5	7.9	6.2	1.7	7.4	5.8	1.6
	September	0.8	8.4	6.5	1.9	7.6	5.9	1.7
	December	0.6	8.4	6.5	1.9	7.8	5.9	1.9
1998	March	0.7	8.5	6.4	2.1	7.8	5.9	1.9
	June	0.6	8.4	6.3	2.1	7.8	6.0	1.8
	September	0.7	8.2	6.3	1.9	7.5	5.9	1.6
	December	0.7	8.1	6.4	1.7	7.4	5.7	1.7
1999	March	0.3	8.2	6.3	1.9	7.9	6.1	1.8
	June	0.6	8.3	6.4	1.9	7.7	6.0	1.7
	September	0.5	8.2	6.4	1.8	7.7	6.0	1.7
	December	1.1	8.5	6.6	1.9	7.4	5.8	1.6
2000	March	0.8	8.2	6.4	1.8	7.4	5.8	1.6
	June	0.4	7.9	6.3	1.6	7.5	5.9	1.6
	September	0.1	7.9	6.2	1.7	7.8	6.1	1.7
	December	0.3	7.9	6.2	1.7	7.6	6.0	1.6
2001	March	-0.1	7.7	6.1	1.6	7.8	6.1	1.7
	June	-0.8	7.4	5.8	1.6	8.2	6.5	1.7
	September	-1.3	7.1	5.5	1.6	8.4	6.6	1.8
	December	-0.8	7.3	5.6	1.7	8.1	6.5	1.6
2002	March	0.1	7.6	5.9	1.7	7.5	5.9	1.6
	June	-0.1	7.5	5.8	1.7	7.6	6.0	1.6
	September	-0.1	7.3	5.7	1.6	7.4	5.9	1.5
	December	-0.2	7.1	5.6	1.5	7.3	5.8	1.5
2003	March	-0.5	6.9	5.5	1.4	7.4	5.9	1.5
	June	-0.2	7.0	5.6	1.4	7.2	5.7	1.5
	September	0.1	6.9	5.5	1.4	6.8	5.5	1.3
	December	0.4	7.2	5.7	1.5	6.8	5.4	1.4
2004	March	0.4	7.2	5.8	1.4	6.8	5.5	1.3
	June	0.5	7.2	5.8	1.4	6.7	5.3	1.4
	September	0.2	7.2	5.7	1.5	7.0	5.5	1.5

¹ The rates measure gross job gains and gross job losses as a percentage of the average of the previous and current employment.

² See footnote 1, table 1.