

## Job openings, hires, and separations fall during the recession

*JOLTS data indicate record-low levels of job openings, hires, and separations in 2009, as well as a record-high number of layoffs and discharges*

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Data from the Job Openings and Labor Turnover Survey (JOLTS) reflect the continued impact that the recession which began in December 2007 (according to the National Bureau of Economic Research<sup>1</sup>) has had on the demand for labor and worker flows. Job openings—a measure of labor demand—and hires and separations—measures of worker flows—all declined during the 2007–09 period and reached series lows in 2009. The job openings rate, seasonally adjusted, dropped from 3.1 percent in December 2007 to 1.9 percent in December 2009. The job openings rate reached a series low of 1.8 percent in April 2009. The annual hires rate declined from 46.1 percent to 37.2 percent, a series low, during the 2007-to-2009 period. The annual separations rate (which includes both voluntary and involuntary separations) dropped from 45.1 percent to 41.0 percent, also a series low, during the 2007–09 period. (See table 1.)

The downward trends in job openings, hires, and separations that began in 2007 are consistent with recessionary trends in other economic statistics. The unemployment rate reached a peak of 10.1 percent in October 2009, having climbed from 5.0 percent in December 2007. Nonfarm employment reached a low of 130 million in December

2009 after having fallen from a high of 138 million in December 2007, a net employment loss of approximately 8 million.<sup>2</sup>

The JOLTS program measures job openings, hires, and separations on a monthly basis by industry<sup>3</sup> and geographic region. JOLTS gauges labor demand by collecting data monthly from a sample of approximately 16,000 nonfarm business establishments. Published JOLTS data are available from December 2000 forward. All monthly JOLTS data used in this report are seasonally adjusted.

### Job openings

During the recession that began in December 2007, the number of job openings has indicated a contraction in labor demand. National job openings reached a prerecession peak of 4.8 million in March 2007. By the official start of the recession, job openings had decreased to 4.4 million. Nonfarm payroll employment peaked at 138 million in December 2007. The declines in job openings became steeper after the onset of the recession. In a weak economy, job openings fall as employers cut back their hiring plans in response to weak demand.<sup>4</sup> The national job openings level reached a series low of 2.3 million in July 2009, a decline of 2.5 million

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**Table 1. Job openings (seasonally adjusted), hires, and separations rates and levels, 2007–09**

[In thousands]

	December rates			December levels		
	Dec. 2007	Dec. 2008	Dec. 2009	Dec. 2007	Dec. 2008	Dec. 2009
Job openings.....	3.1	2.2	1.9	4,378	3,078	2,531
	Annual rates			Annual levels		
	2007	2008	2009	2007	2008	2009
Hires.....	46.1	41.1	37.2	63,404	56,204	48,696
Separations.....	45.1	43.6	41.0	62,125	59,640	53,679

openings from its March 2007 peak. Job openings trended up in the second half of 2009, and the national level was 2.7 million in February 2010. (See chart 1.)

*Job openings by industry.* The monthly job openings levels for all published industries have trended downward during the recession, with every industry falling to a series low during 2009. The job openings levels for most industries began to decline before the start of the recession. The two industries with the steepest drops in job openings were construction and manufacturing. Both industries peaked in early 2007 and trended downward prior to the recession. For all JOLTS industries, the decline in job openings appears to have leveled off in the second half of 2009. Manufacturing has trended upward since July 2009, and retail trade has done so since November 2009. All industries except for manufacturing ended 2009 with fewer job openings than existed in December 2008.

*Job openings by region.* The finest geographical breakout the JOLTS sample can provide is for the Midwest, Northeast, South, and West regions. All four regions experienced recessionary trends in job openings similar to that of the national level, reaching their peaks before December 2007. Job openings trended downward in the four regions during the recession and dropped to series lows in July 2009. The West experienced the largest decline in job openings, with the level dropping 59 percent from the start of the recession to July 2009. The downward trend in job openings appears to have subsided in the four regions during the middle of 2009, with an upward trend starting at the end of the year. Despite the upward movement late in the year, all four regions had lower levels of job openings in December 2009 than in December 2008.

*Job openings and unemployment.* Historically, the total nonfarm job openings rate and the Current Population Survey's national unemployment rate have moved inversely. An economic expansion is indicated by a low

unemployment rate and a high rate of job openings. A contraction is indicated by a high unemployment rate and a low rate of job openings. Chart 2 illustrates the historically inverse relationship between these two series: the two rates move toward each other during expansions and away from each other during contractions. Before the recession the difference between the two rates had never (since the beginning of the JOLTS data series) surpassed 3.8 percentage points. With the exception of the period from the beginning of the data series through May 2001, the difference between the two series was smallest in March 2007. In April 2007, the two rates began to move away from each other, reflecting the weakening of the economy before the beginning of the most recent recession. At the onset of the recession, the difference between the job openings rate and the unemployment rate began to grow rapidly, reaching a series high of 8.2 percent in October 2009. Since October the gap has decreased, and by February 2010 it was 7.6 percent. (See chart 2.)

### Definitions of JOLTS terms

*Job openings.* Monthly job openings are defined as the number of openings on the last day of the reference month.

*Hires.* Monthly hires are all additions of personnel to the payroll during the reference month, and annual hires are all additions to the payroll during a given year.

*Total separations.* Monthly total separations are the number of employees separated from payroll during the reference month, and annual total separations are the number separated during a given year. Separations are classified as quits, layoffs and discharges, and other separations.

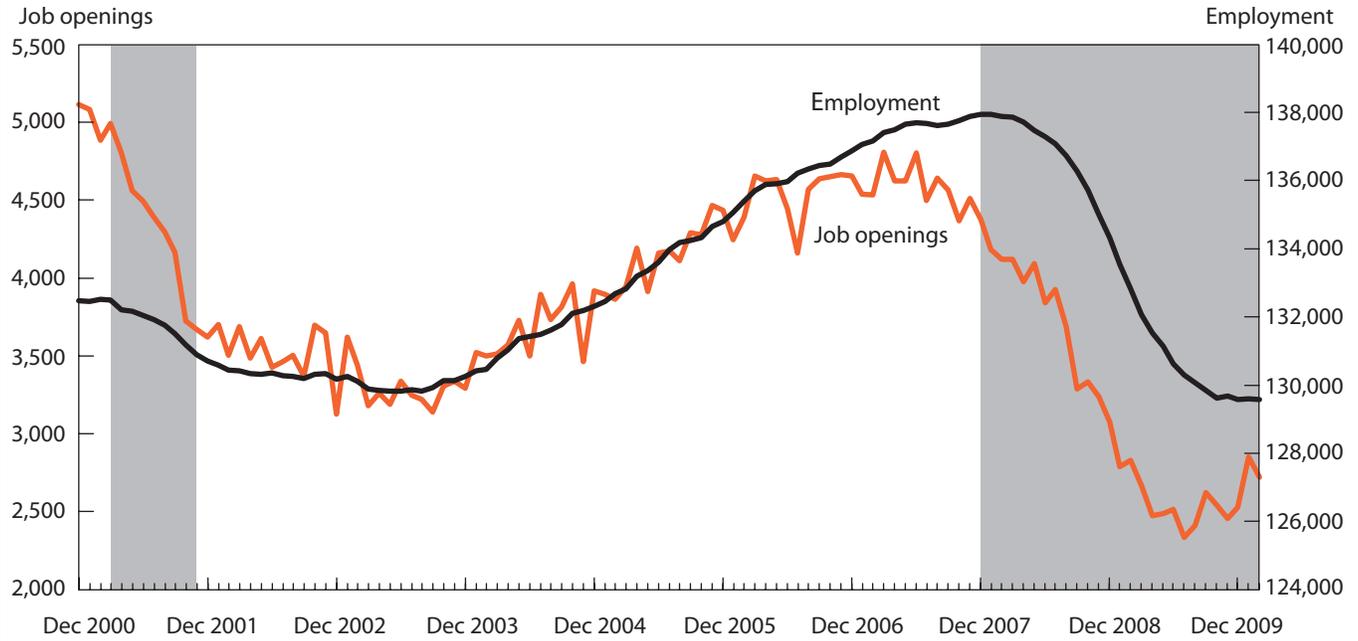
*Quits.* Cases in which people left a job voluntarily but did not retire or transfer.

*Layoffs and discharges.* Involuntary separations initiated by employers.

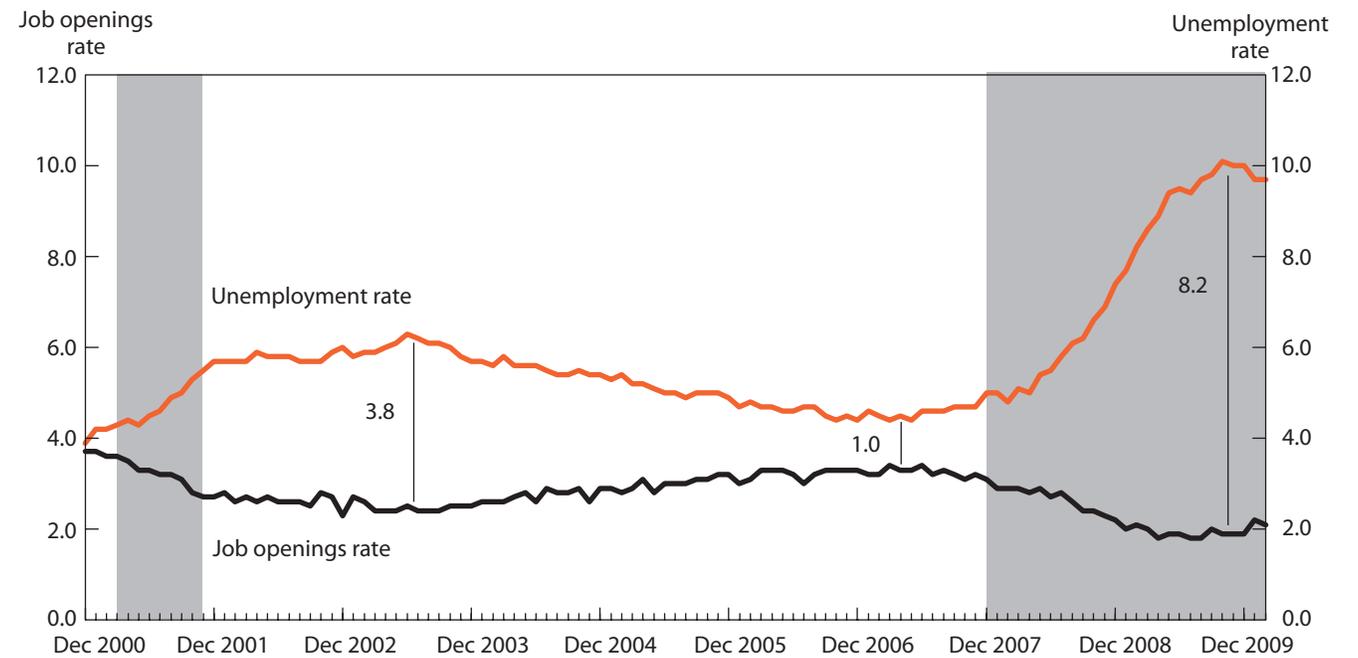
*Other separations.* Retirements, transfers, deaths, and separations caused by disability.

**Chart 1. JOLTS total nonfarm job openings and CES total nonfarm employment, both seasonally adjusted, December 2000–February 2010**

[In thousands]



**Chart 2. JOLTS job openings rate and CPS unemployment rate, both seasonally adjusted, December 2000–February 2010**



The Beveridge Curve is the economic model used to examine the inverse relationship between labor demand (as measured by job openings) and labor supply (as measured by the number of unemployed people) over time.<sup>5</sup> The curve plots the job openings rate with respect to the unemployment rate. During the recession that began in December 2007, the curve began to move southeasterly, with job openings and labor demand decreasing and unemployment and excess labor supply increasing. The movement reflects the contracting job market. In October 2008 the curve started to move horizontally to the right as the unemployment rate increased faster than the job openings rate decreased. The lowest points on the curve, representing the series lows for the job openings rate, occurred in April, July, and August 2009, but the highest unemployment rate did not occur until October 2009. (See chart 3.)

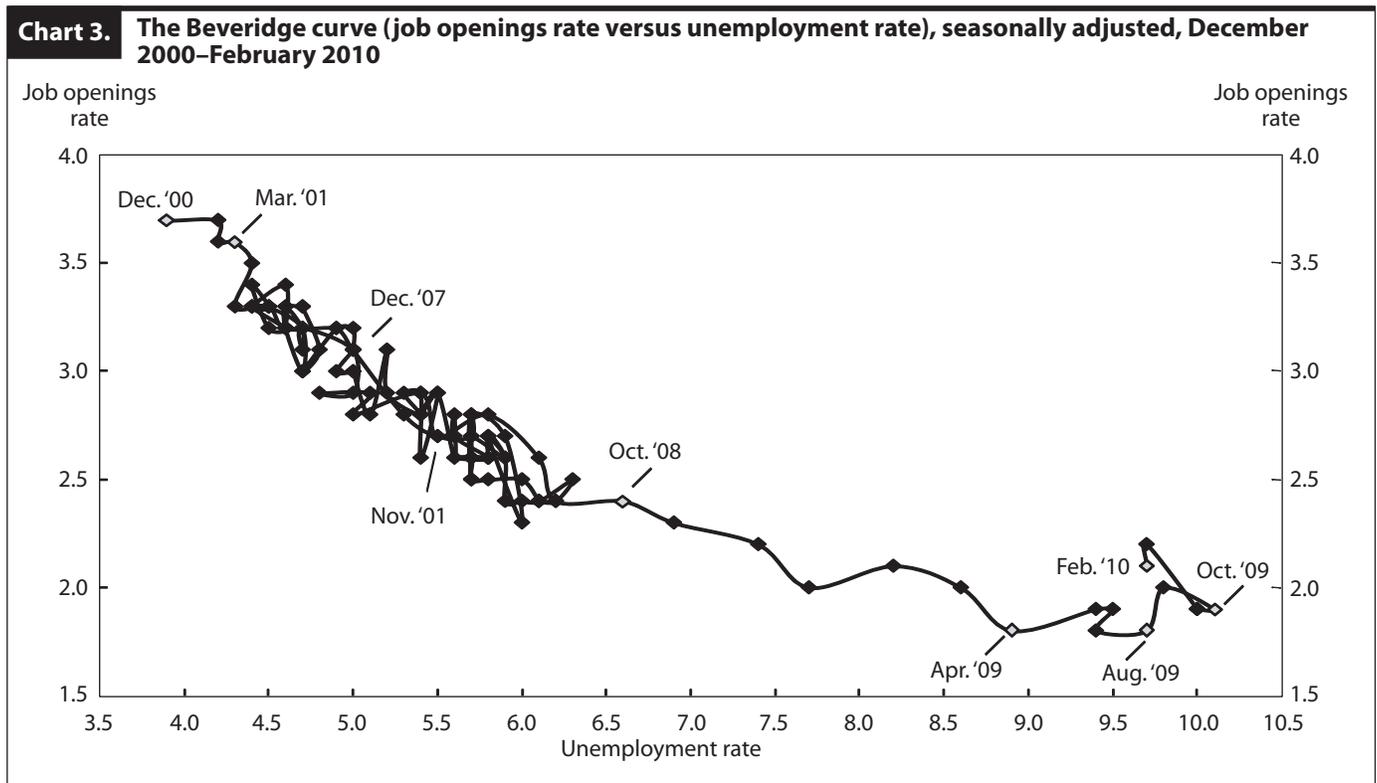
Another way to look at the effect the recession had on the labor market is to create a ratio from the unemployment and job openings data. In the most recent recession, the ratio has increased. There are many more unemployed people than there are job openings. The southeasterly movement of the Beveridge Curve during the recession also shows that the number of jobseekers per opening was increasing.<sup>6</sup>

The ratio of unemployed persons per job opening bottomed in late 2006 to early 2007 and then began to climb through the onset of the December 2007 recession. The ratio reached a series high of 6.2 unemployed persons per job opening in November 2009 and has since fallen. The ratio was 5.5 in February 2010.<sup>7</sup> (See chart 4.)

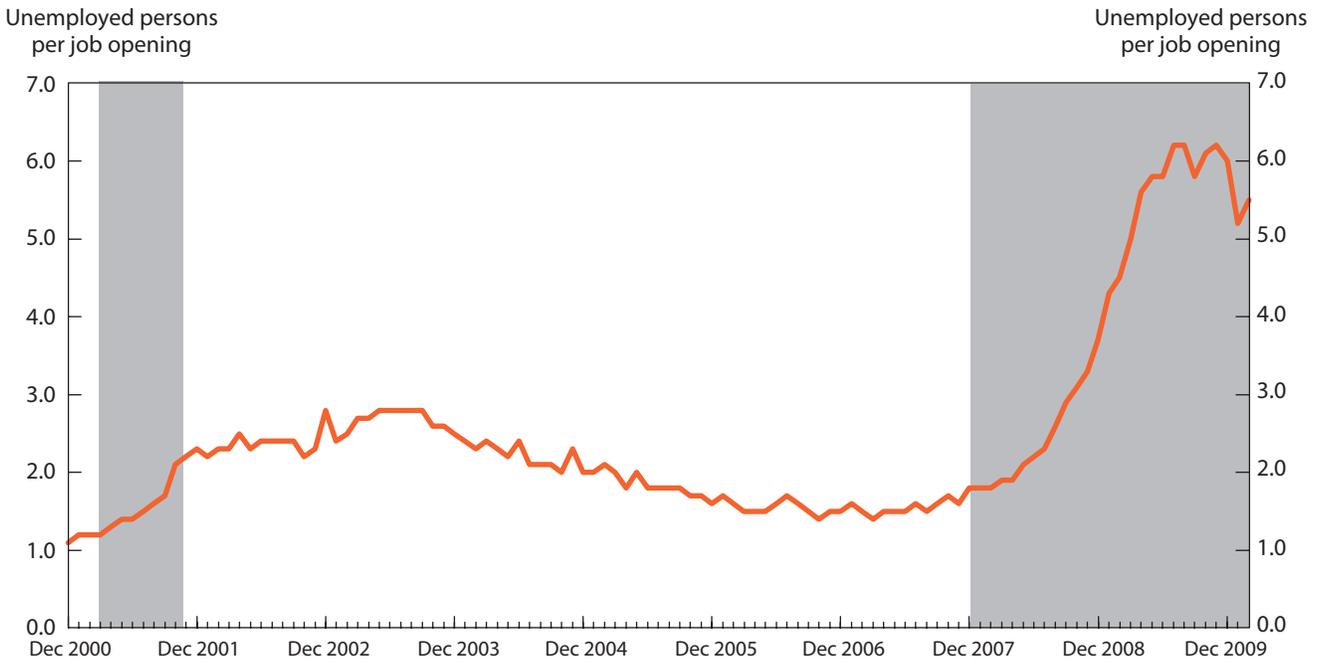
### Hires and separations

The levels of both hires and separations began to decline during the months before the most recent recession began. Both the level of hires and that of separations reached high points in May 2006: 5.6 million hires and approximately the same number of separations. Employment, as measured by the Current Employment Statistics program, reached a high point of 138 million in December 2007. Shortly after the recession began, the level of hires and that of employment showed steep drops whereas separations declined slowly until a more rapid decline began after January 2009. From January 2008 through January 2010, separations consistently exceeded hires, causing employment levels to drop.<sup>8</sup> Hires and employment leveled off in late 2009, whereas separations have continued to decline. (See chart 5.)

The level of hires hovered between 5.3 million and 5.6

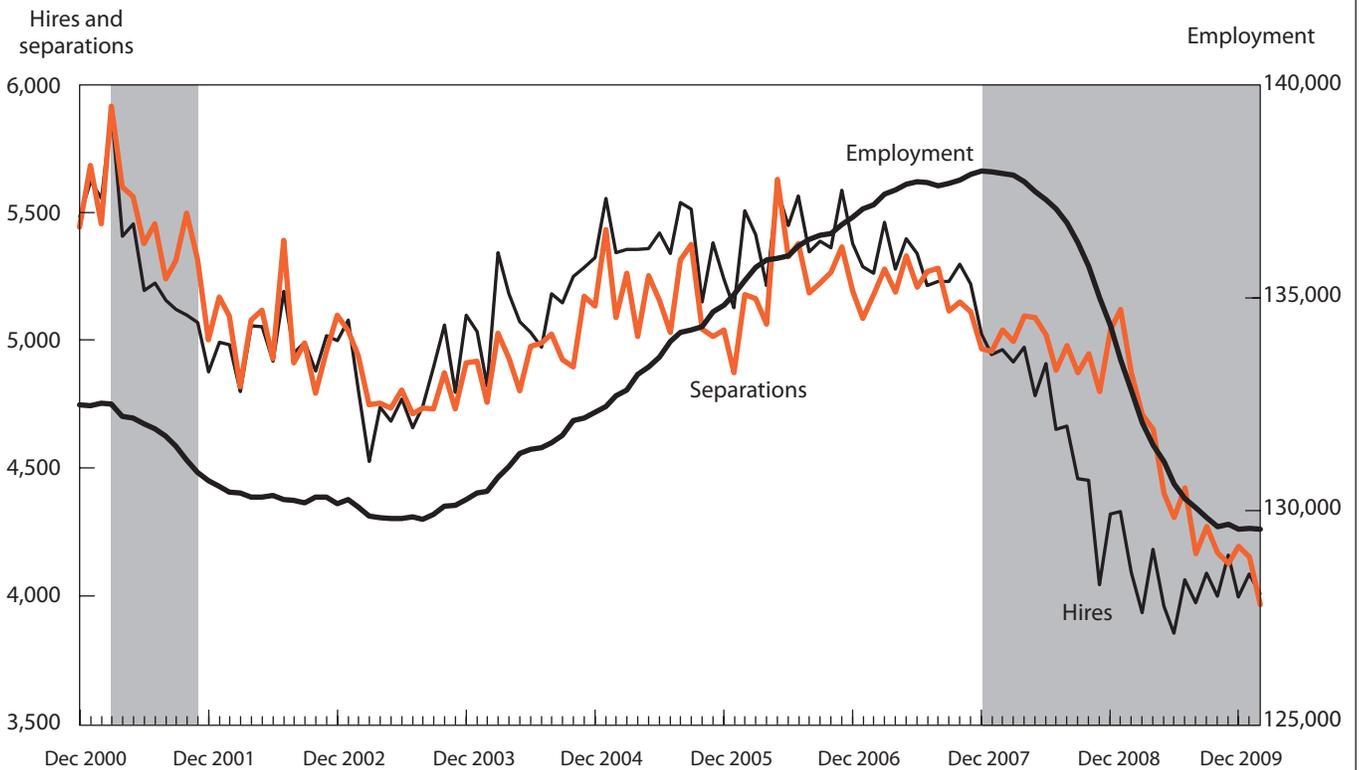


**Chart 4. Ratio of unemployed persons per job opening, seasonally adjusted, December 2000–February 2010**



**Chart 5. Hires, separations, and employment, all seasonally adjusted, December 2000–February 2010**

[In thousands]



million from May 2006 through November 2006 and then began a steady decline. In June 2009, the hires level dropped to a series low of 3.9 million. Since July 2009, the hires level has remained between 4.0 million and 4.2 million. A primary reason for the drop in hires before and during the recession was the hiring freezes implemented by companies that were looking to reduce the size of their workforce but avoid layoffs.<sup>9</sup> Total annual hires for 2009 were 48.7 million, making that year the weakest one since the series began.<sup>10</sup>

The dynamic nature of the labor market has remained apparent during the recession that began in December 2007. Hires and separations have continued to occur, albeit at increasingly lower levels. Although many companies have discharged employees, many of them have continued to hire at the same time. Sometimes companies lay off employees with outdated skills and search for new employees who have different skills because the companies are moving away from retaining and retraining employees.<sup>11</sup>

In May 2006, the separations level was 5.6 million. The separations level declined from that point to reach a series low in February 2010 of 4.0 million. Between May 2006 and January 2009, the number of separations had declined at a slower pace; after January 2009, separations began a steeper drop. The relatively slower decline in separations between May 2006 and January 2009 can be attributed to high levels of layoffs and discharges. Another component of separations is quits, which declined from November 2006 through September 2009. Economic uncertainty has likely resulted in workers keeping the jobs that they have instead of risking unemployment.<sup>12</sup> Beginning in January 2009, layoffs and discharges started to decline. The separations level for the year 2009 declined to 53.7 million, which is the lowest annual level since the series began.

*Hires by industry.* Hires within industries show trends similar to the trend at the national level. Seasonally adjusted monthly data show that in most industries hires began to decline before the onset of the recession. Hires in construction peaked relatively early—in August 2005—at 534,000 hires and declined through June 2009, when they reached a low point of 268,000. In late 2009 and early 2010, construction hires have risen slightly. Manufacturing hires peaked at 421,000 in March 2006 and reached a trough of 204,000 in May 2009. Retail trade; professional and business services; education and health services; and arts, entertainment, and recreation all appear to have reached low points and leveled off or increased slightly by early 2010. The exception is accommodation and food services, for which hiring peaked in November 2006 and declined from that point onward;

hiring in this industry was at a series low in February 2010. Annual hires data show that all industries declined for the year 2009, with the exception of the “other services” industry, which showed a slight increase in hires.

*Hires by region.* Annual hires in all four Census regions have declined since the beginning of the recession and dropped to series lows in 2009. From 2007 to 2009, the South experienced the largest decline in hires, followed closely by the West.<sup>13</sup> Hires fell in the South from 24 million annually in 2007 to 18 million annually in 2009. Annual hires in the West fell from 15 million in 2007 to 11 million in 2009. Both the Northeast and the Midwest also have been affected by the recession, with annual hires levels falling by 1.2 million in the former and 3.4 million in the latter from 2007 to 2009.

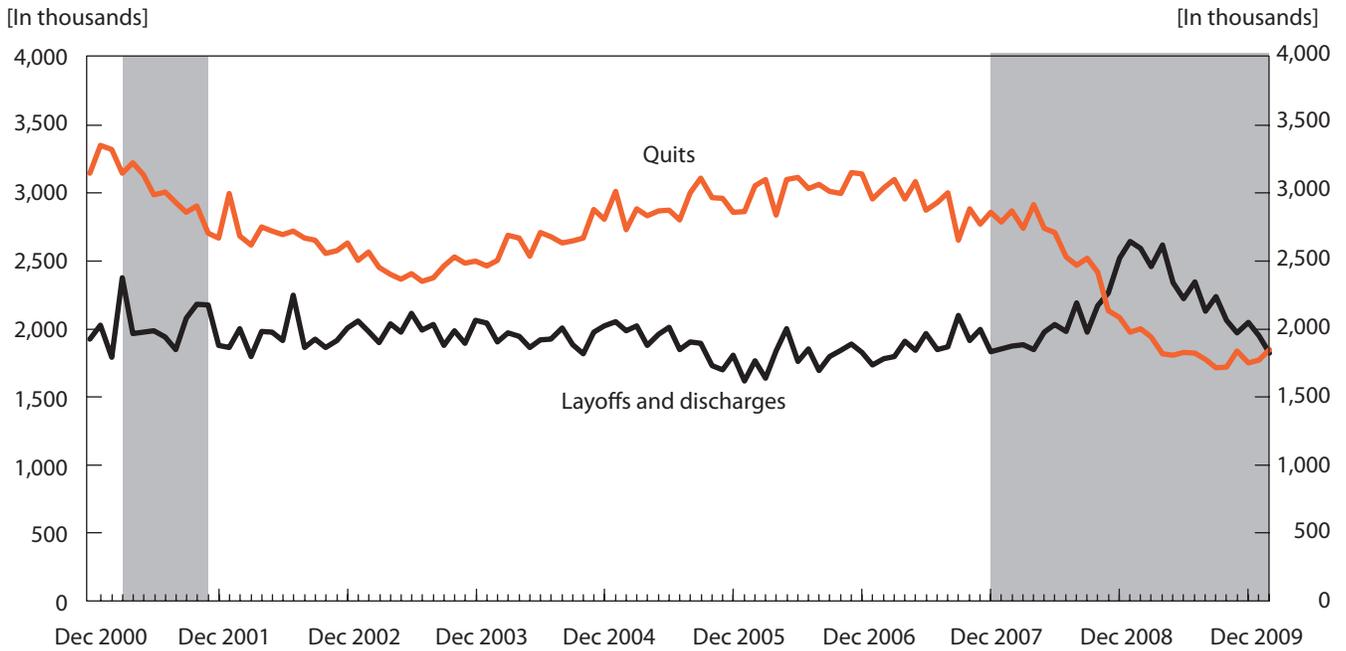
### Components of total separations

Total separations comprise quits, layoffs and discharges, and other separations. Each component contributes to the overall movement in total separations. However, every component has unique trends and cyclical movements. Overall, monthly total separations changed little from the beginning of the recession through early 2009, hovering between 4.8 million and 5.1 million. Still, the labor market has remained dynamic, as indicated by the underlying movements of the components of separations. Quits decreased because many employees chose to keep their jobs. Layoffs and discharges, in contrast, increased.

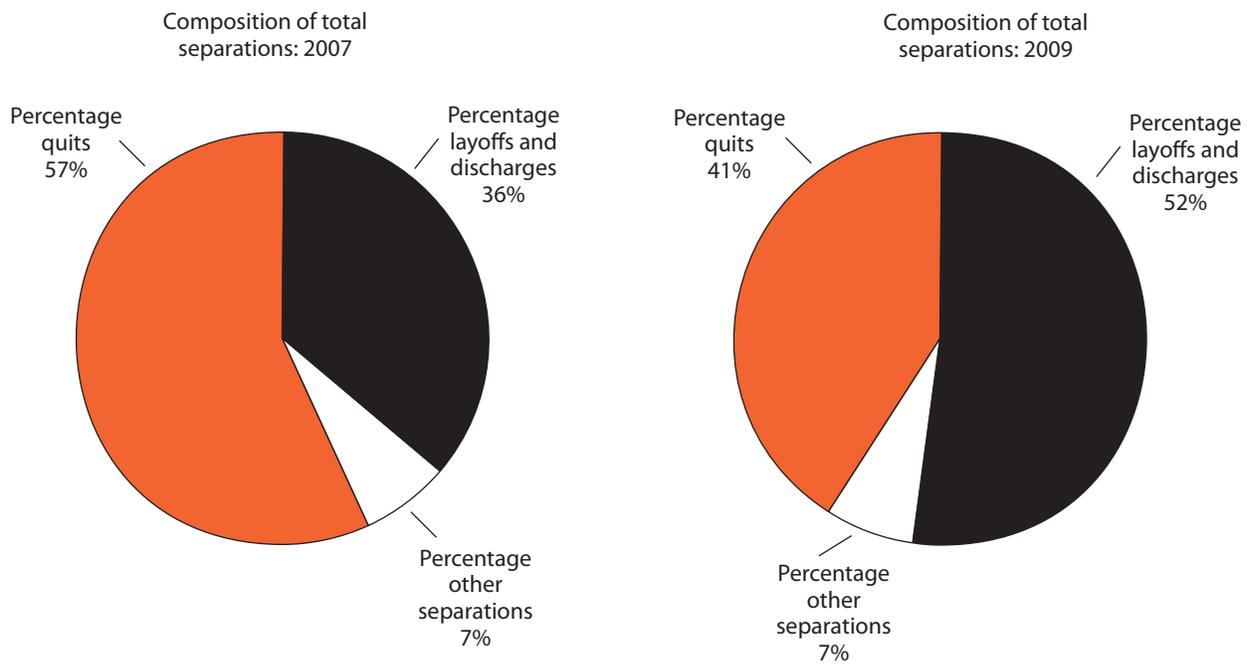
The number of quits usually exceeds the number of layoffs and discharges. During the most recent economic expansion, the gap between quits and layoffs and discharges widened considerably and then narrowed during 2007. The two series reversed an 8-year trend when the number of layoffs and discharges exceeded the number of quits in November 2008 for the first time. Layoffs and discharges continued to exceed quits through January 2010. February 2010 is the first month since November 2008 in which the quits level was higher than the layoffs and discharges level. (See chart 6.)

Between 2007 and 2009, the relative annual contributions to total separations of quits and of layoffs and discharges changed dramatically. Note the differences between the two pie graphs of chart 7. From 2007 to 2009, the annual share of quits dropped from 57 percent to 41 percent. In that same period, the share of layoffs and discharges increased from 36 percent to 52 percent. The share of other separations remained stable at 7 percent from 2007 through 2009 in spite of an aging baby-boomer

**Chart 6. Quits and layoffs and discharges, both seasonally adjusted, December 2000–February 2010**



**Chart 7. Composition of total separations, 2007 and 2009**



**Table 2. Composition of JOLTS separations, 2001–09**

Year	Total separations, in thousands	Layoffs and discharges, in thousands	Layoffs and discharges: percentage of total separations	Quits, in thousands	Quits: percentage of total separations	Other separations, in thousands	Other separations: percentage of total separations
2001.....	65,610	24,351	37.1	36,405	55.5	4,851	7.4
2002.....	60,412	23,325	38.6	32,375	53.6	4,711	7.8
2003.....	57,847	23,959	41.4	29,351	50.7	4,537	7.8
2004.....	59,666	23,389	39.2	31,852	53.4	4,425	7.4
2005.....	62,107	22,774	36.7	34,964	56.3	4,369	7.0
2006.....	62,661	21,460	34.2	36,327	58.0	4,871	7.8
2007.....	62,125	22,557	36.3	35,108	56.5	4,464	7.2
2008.....	59,640	24,549	41.2	31,074	52.1	4,018	6.7
2009.....	53,679	27,790	51.8	21,964	40.9	3,921	7.3

**Table 3. Annual levels of quits, layoffs and discharges, and other separations, by region, 2007–09**

[In thousands]

Region	Quits			Layoffs and discharges			Other separations		
	2007	2008	2009	2007	2008	2009	2007	2008	2009
Northeast.....	4,708	4,622	3,294	4,002	4,395	5,335	820	779	740
South.....	14,475	12,426	8,645	7,912	8,300	9,554	1,475	1,372	1,445
Midwest.....	7,554	6,893	4,928	5,282	5,316	6,103	1,034	954	900
West.....	8,370	7,131	5,100	5,359	6,538	6,797	1,134	916	839

population, possibly indicating a recession-induced reluctance among workers to retire. (See table 2 and chart 7.)

*Components of separations by industry and region.* From the onset of the recession in December 2007 through February 2010, each industry has shown an overall decline in the quits level. Annual quits decreased from 2008 to 2009 in every JOLTS industry and, with the exception of educational services, reached a series low in each industry. In addition, quits declined from 2008 to 2009 in every region on an annual basis. The majority of industries and all regions showed a decline in quits from 2007 to 2008.

The annual number of layoffs and discharges increased from 2008 to 2009 in every industry with the exceptions of retail trade and arts, entertainment, and recreation, and reached series highs in almost every industry. On an annual basis, layoffs and discharges increased in every region from 2008 to 2009. From 2007 to 2008, layoffs and

discharges increased for the majority of industries and all regions. (See table 3.)

Most industries showed small declines in the component of other separations from 2007 to 2008 and from 2008 to 2009. Construction showed the largest decline in 2009, with 100,000 fewer other separations than in 2008.

EXAMINATION OF THE DEMAND FOR LABOR AND OF WORKER FLOWS provides valuable insight into how employers react to the business cycle. JOLTS data show that the labor market contracted over the 2007–09 period. Both the number of job openings and the number of hires declined from the months before the recession through the first half of 2009. Decomposition of the separations data shows that underlying churning in the labor market caused a significant shift in the behavior of quits and layoffs and discharges data that caused the two series to reverse their historical trend. □

## NOTES

<sup>1</sup> *Determination of the December 2007 Peak in Economic Activity* (Cambridge, Mass., National Bureau of Economic Research), on the Internet at [www.nber.org/cycles/dec2008.html](http://www.nber.org/cycles/dec2008.html) (visited May 11, 2010). The National Bureau of Economic Research has not yet determined an endpoint for the recession. Therefore, all economic analysis in this article neither assumes the recession has ended nor assumes it is still ongoing.

<sup>2</sup> Data on annual employment levels are available from the Current Employment Statistics program at <http://stats.bls.gov/ces/home.htm> (visited Apr. 6, 2010).

<sup>3</sup> The term “industry” can refer to a supersector, sector, or subsector, depending on the context. In analyzing “industries,” the JOLTS program follows the North American Industry Classification System.

<sup>4</sup> Kelly A. Clark and Rosemary Hyson, “New tools for labor market analysis: JOLTS,” *Monthly Labor Review*, December 2001, on the Internet at [www.bls.gov/opub/mlr/2001/12/art4full.pdf](http://www.bls.gov/opub/mlr/2001/12/art4full.pdf) (visited Apr. 26, 2010).

<sup>5</sup> Kelly A. Clark, *What an Indicator of Labor Demand Means for U.S. Labor Market Analysis: Initial Results from the Job Openings and Labor Turnover Survey* (Bureau of Labor Statistics, 2003), on the Internet at [www.bls.gov/osmr/pdf/st030150.pdf](http://www.bls.gov/osmr/pdf/st030150.pdf) (visited Apr. 26, 2010).

<sup>6</sup> Julie Hotchkiss and Menbere Shiferaw, “Employment Survey Delivers JOLTS,” EconSouth, Federal Reserve Bank of Atlanta, first quarter 2010, on the Internet at [www.frbatlanta.org/documents/pubs/econsouth/q110econsouth.pdf](http://www.frbatlanta.org/documents/pubs/econsouth/q110econsouth.pdf) (visited Mar. 22, 2010).

<sup>7</sup> Katherine Klemmer, “Job availability during a recession: an examination of the number of unemployed persons per job opening,” *Issues in Labor Statistics*, March 2010, on the Internet at [www.bls.gov/opub/ils/pdf/opbils80.pdf](http://www.bls.gov/opub/ils/pdf/opbils80.pdf) (visited Apr. 14, 2010).

<sup>8</sup> Casey B. Mulligan, “Another Look at Hiring and Layoffs,” *The*

*New York Times* Economix blog, Dec. 23, 2009, on the Internet at <http://economix.blogs.nytimes.com/2009/12/23/another-look-at-hiring-and-layoffs/> (visited Apr. 12, 2010).

<sup>9</sup> Chris Isidore, “The jobs problem you don’t know about,” *CNNMoney.com*, Feb. 9, 2009, on the Internet at [http://money.cnn.com/2009/02/05/news/economy/jobs\\_outlook/index.htm](http://money.cnn.com/2009/02/05/news/economy/jobs_outlook/index.htm) (visited Mar. 22, 2010).

<sup>10</sup> Mark Lieberman, “In English, Please: A Dismal Jolt,” *FOXBusiness*, July 7, 2009, on the Internet at [www.foxbusiness.com/story/markets/english-dismal-jolt/](http://www.foxbusiness.com/story/markets/english-dismal-jolt/) (visited Mar. 22, 2010).

<sup>11</sup> Cari Tuna, “Many Companies Hire as They Fire,” *The Wall Street Journal*, May 11, 2009, p. B6, on the Internet at <http://online.wsj.com/article/SB124198904713604533.html> (visited Mar. 22, 2010).

<sup>12</sup> Chris Isidore, “Take this job and tolerate it,” *CNNMoney.com*, Mar. 23, 2010, on the Internet at [http://money.cnn.com/2010/03/23/news/economy/trapped\\_in\\_a\\_job/](http://money.cnn.com/2010/03/23/news/economy/trapped_in_a_job/) (visited Apr. 21, 2010).

<sup>13</sup> Hotchkiss and Shiferaw, “Employment Survey Delivers JOLTS.”