Employment loss and the 2007–09 recession: an overview

The downturn in employment accompanying the 2007–09 recession was notable for its prolonged length, for affecting an especially wide range of industries, and for being deeper than any other downturn since World War II

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The U.S. economy is recovering from one of the longest and deepest recessions since the end of World War II (WWII). Virtually no area of the economy remained unscathed from the December 2007–June 2009 recession,[1] particularly the labor market. Nonfarm payroll employment, measured by the Current Employment Statistics (CES) program, peaked in January 2008, 1 month after the peak in the business cycle.[2] After relatively modest job losses in early 2008, the losses increased sharply in the latter half of the year, and declines spread beyond traditionally cyclical industries.

The already-weak economy was jolted by financial market turmoil in fall 2008. The impact on employment was immediate and severe, with monthly job losses spiking to among the highest on record.[3] At its lowest point, February 2010, U.S. employment had declined by 8.8 million from its prerecession peak. (See chart 1.) The breadth and depth of the recession, particularly in comparison with recent recessions, has led some to label it "The Great Recession."[4] In 2010, the labor market stabilized as employment grew modestly. Despite recent improvements, the labor market continues to struggle from the aftermath of a historic employment downturn that is notable for its breadth, depth, and length.

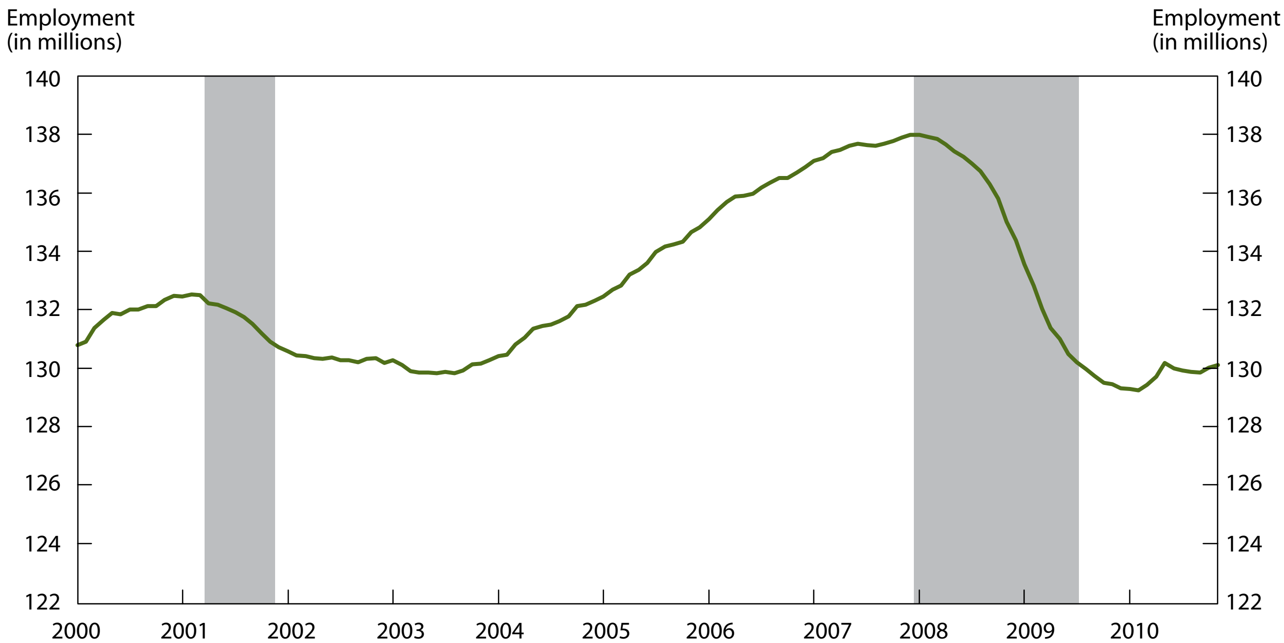
Prelude to the recession

The 2007–09 recession was preceded by a period of steady economic growth. Although initially slow to recover from a mild recession earlier in the decade, the labor market was healthy overall by 2006. The unemployment rate was low by historical standards, and payroll employment was steadily expanding.[5] There remained a few areas of weakness; for example, employment in manufacturing and information never returned to prerecession levels. Nonetheless, most industries were adding jobs.

Employment growth before the most recent recession was centered in three areas of the economy: education, healthcare, and various industries related to the housing market.[6] Education and health care have long been growing industries in terms of both economic output and employment.[7] Industries related to housing market activity have historically been more cyclical.[8] The housing market boomed throughout the first half of the 2000s as home prices soared and construction activity rose to record levels.[9]

The rapid growth in housing drove economic growth in two ways. First, housing construction led to job growth in construction as well as in complementary industries such as mortgage finance, real estate, construction-related manufacturing, and retail

Chart 1. Total nonfarm employment, monthly data, seasonally adjusted, 2000–10



NOTE: Shaded areas denote recessions as determined by the National Bureau of Economic Research.
SOURCE: Bureau of Labor Statistics, Current Employment Statistics survey.

furniture stores. Second, the housing boom also contributed to economic growth in a broader sense through a positive "wealth effect" that boosted spending across the economy.[10] According to the Federal Reserve, U.S. households' aggregate real estate assets rose by over a third between 2003 and 2006.[11] Homeowners extracted part of this increased mortgage equity to fund consumption in other areas, such as automobiles and other consumer goods. It is estimated that income extraction from housing more than doubled between 2001 and 2005, with over $1.4 trillion extracted in 2005 alone.[12] By one estimate, this housing-fueled spending accounted for at least one-quarter of the growth in consumer expenditures.[13]

Despite the economy's overall strength, certain segments of it were showing signs of trouble by 2006. The housing market, after serving as one of the key drivers of growth throughout much of the decade, was cooling off. New home sales peaked in July 2005, and by January 2006 housing starts had begun declining.[14] Over the course of 2007, the housing credit market deteriorated as delinquency rates rose and home foreclosures reached levels unseen since recordkeeping began in the late 1970s.[15] The decline in credit quality was most pronounced among nontraditional loans such as subprime loans. These nontraditional loans, aimed at borrowers unable to qualify for more traditional loans, grew in market share as home prices rose and homeownership expanded.[16]

Initially, the negative impact of housing on the broader economy appeared to be relativity contained. Areas outside of housing continued to grow as GDP expanded and employment grew steadily throughout 2006. However, over the course of 2007, the deepening trouble in housing began showing signs of spreading as most major economic indicators leveled off or declined outright. The unemployment rate, which had edged downward for several years, leveled off in late 2006 and by late 2007 began trending up. Nonfarm employment continued to expand throughout 2007, though at a reduced rate. Over the course of the year, longstanding job losses in manufacturing were joined by deepening job losses in housing-related industries, such as construction and finance.

Overview of the recession

Weighed down by widespread economic troubles, the economy officially entered a recession in December 2007.

Nonfarm employment peaked in January 2008 and then entered a period of steady decline. Losses were heaviest in traditionally cyclical industries such as manufacturing and construction. However, weakness was not confined to these industries: a growing number of traditionally more resilient industries such as retail trade and leisure and hospitality reported employment declines.

Rising oil prices, which are often a contributing factor to recessions, further strained the economy in 2008. Global crude oil production failed to keep up with demand, causing prices to double from June 2007 to June 2008.[17] For homeowners already feeling the effects of a decline in the value of their homes, rising energy costs came as an unwelcome development. Personal consumption expenditures began to shrink in the first quarter of 2008, particularly expenditures on durable goods such as autos and appliances—which tend to be highly cyclical.[18]

The surge in oil and other commodity prices adversely affected businesses as well. From July 2007 to July 2008, the Producer Price Index (PPI) for all commodities increased by 17.4 percent. This was the highest over-the-year percent change in this index since 1974, when oil prices surged following a supply reduction by the Organization of Arab Petroleum Exporting Countries (OAPEC). This oil shock contributed to the 1973–75 recession.[19] One industry that was helped by the boom in commodities prices was mining, which continued to add jobs through the first half of the recession because high prices drove businesses to extract resources that had been unprofitable when price levels were lower.[20] Commodity prices starting dropping sharply, however, when the recession turned global and world demand fell. From July 2008 to July 2009, 1 month after the recession ended, the PPI for all commodities fell by 16.1 percent—the steepest 12-month percent decline since 1931.

Depth

The 2007–09 recession did not progress evenly. During the first 9 months of the recession, nonfarm employment decreased by 1.2 percent, a change that fell in line with the relatively modest losses of the 1990–91 and 2001 recessions.[21] In addition, the distribution of job losses by industry during the early stages of the most recent recession was similar to that during the two previous recessions. During the first half of the 2007–09 recession and the entirety of each of the previous two recessions, a little more than half of job losses occurred in manufacturing and construction (which both tend to be sensitive to the business cycle).

The shallow employment declines did not last, however. The economic downturn intensified in September 2008 when the economy was jolted by trouble in the Nation's financial system. In the aftermath of the turmoil, credit markets constricted and banks tightened lending standards.[22] The recession rapidly deepened, and job losses spiked.

Monthly job losses averaged 712,000 from October 2008 through March 2009—the most severe 6-month period of job losses since 1945, when WWII was ending. During the final 3 months of the recession, April through June 2009, job losses remained severe but moderated somewhat to an average monthly employment decline of 516,000. Despite the official end of the recession, nonfarm employment declined by another 1.2 million until reaching a trough in February 2010.

Breadth

The downturn in employment was notable for the breadth of industries that were affected. (See table 1.) Many industries that added jobs during the first 9 months of the recession began shedding them, and industries that were losing jobs began losing them more rapidly. The CES 1-month diffusion index, a measure of the breadth of employment losses across industries, fell to 17.0 in March 2009, its lowest level since the series began in 1991.[23]

Traditionally, goods-producing industries have experienced the largest declines in employment during recessions. The 2007–09 recession was no different, with construction and manufacturing both experiencing their largest percentage declines of the post-WWII era. Service-providing industries also experienced large employment declines. Although the percentage declines in private services were not as large as those in the good-producing industries, they were the largest on record for private services.

Construction was among the hardest hit industries during the recession.[24] Deep employment losses began in residential construction and spread to nonresidential construction as commercial and industrial projects dwindled.[25] Since peaking in April 2006, employment in construction has fallen by 2.2 million, or 28.8 percent, as of December 2010. Large job losses are not unprecedented in construction, which is known as a highly cyclical industry. However, even considering the volatile history of the construction industry, the 2007–09 downturn stands out. Declines from the prerecession peak in construction employment easily exceeded those of the earlier housing busts in the 1980s and 1990s, and are the steepest since the labor dislocations during WWII.

Manufacturing, which had been losing jobs for 10 years before the 2007–09 recession, also experienced sig-

Table 1. Percent change in employment during recessions, 1945–2010, seasonally adjusted

Industry	Feb. 1945–Oct. 1945 (8 months)	Nov. 1948–Oct. 1949 (11 months)	July 1953–May 1954 (10 months)	Aug. 1957–Apr. 1958 (8 months)	Apr. 1960–Feb. 1961 (10 months)	Dec. 1969–Nov. 1970 (11 months)
Total nonfarm	–7.9	–5.0	–3.1	–4.0	–2.3	–1.2
Total private	–8.2	–6.0	–3.8	–4.9	–2.8	–2.0
Goods producing	–17.8	–10.6	–7.2	–8.2	–5.3	–6.7
Service providing	–.6	–1.4	–.4	–1.5	–.6	1.5
Mining and logging	–10.9	–38.7	–8.7	–9.6	–7.5	–2.0
Construction	3.4	–2.7	.9	–5.5	–3.9	–1.7
Manufacturing	–19.9	–9.8	–8.4	–8.6	–5.4	–7.9
Durable goods	–30.2	–15.4	–11.2	–12.2	–7.7	–11.0
Nondurable goods	–1.2	–2.6	–4.3	–3.0	–2.2	–3.0
Wholesale trade	6.9	–1.8	.1	–1.9	–.8	.5
Retail trade	3.2	–1.1	–.7	–2.6	–2.4	.6
Transportation and warehousing	—	—	—	—	—	—
Utilities	—	—	—	—	—	2.1
Information	–8.3	–7.9	–6.0	–6.8	–3.7	–2.5
Financial activities	4.1	1.5	3.2	1.0	1.9	2.8
Professional and business services	–3.0	–2.7	–1.4	–2.6	.1	.7
Education and health services	4.0	.9	1.4	–.4	2.3	2.3
Leisure and hospitality	2.9	–.7	–.3	–1.8	–1.9	1.2
Other services	3.7	1.0	1.5	–.4	2.2	2.2
Government	–6.2	1.7	1.6	1.4	.6	2.8

Industry	Nov. 1973–Mar. 1975 (16 months)	Jan. 1980–July 1980 (6 months)	July 1981–Nov. 1982 (16 months)	July 1990–Mar. 1991 (8 months)	Mar. 2001–Nov. 2001 (8 months)	Dec. 2007–June 2009 (18 months)
Total nonfarm	–1.6	–1.1	–3.1	–1.1	–1.2	–5.4
Total private	–3.1	–1.6	–3.5	–1.3	–1.8	–6.6
Goods producing	–10.3	–5.0	–10.6	–4.1	–4.9	–16.2
Service providing	2.2	.4	–.4	–.3	–.4	–3.4
Mining and logging	11.1	2.8	–12.4	–1.3	–1.5	–7.3
Construction	–14.3	–5.9	–8.2	–7.5	–1.1	–19.8
Manufacturing	–10.2	–5.2	–11.0	–3.2	–6.6	–14.6
Durable goods	–10.7	–6.5	–14.1	–4.3	–7.5	–17.5
Nondurable goods	–9.4	–3.1	–5.8	–1.4	–5.0	–9.8
Wholesale trade	1.4	–.3	–2.8	–1.4	–1.9	–7.6
Retail trade	0.5	–.7	–.4	–1.7	–1.3	–6.7
Transportation and warehousing	–3.6	–3.0	–6.1	–.3	–4.2	–7.3
Utilities	–.2	1.7	3.4	–.6	.0	.6
Information	–4.7	–2.2	–4.7	–.3	–4.9	–7.6
Financial activities	1.5	1.4	1.0	–.4	.6	–5.8
Professional and business services	1.8	.8	.6	–1.9	–3.8	–8.9
Education and health services	4.7	1.9	2.6	3.5	2.6	3.3
Leisure and hospitality	1.3	–.3	.4	–.3	–.1	–3.4
Other services	4.5	1.9	2.5	–.1	2.2	–2.5
Government	5.1	1.3	–1.2	–.4	1.8	.8

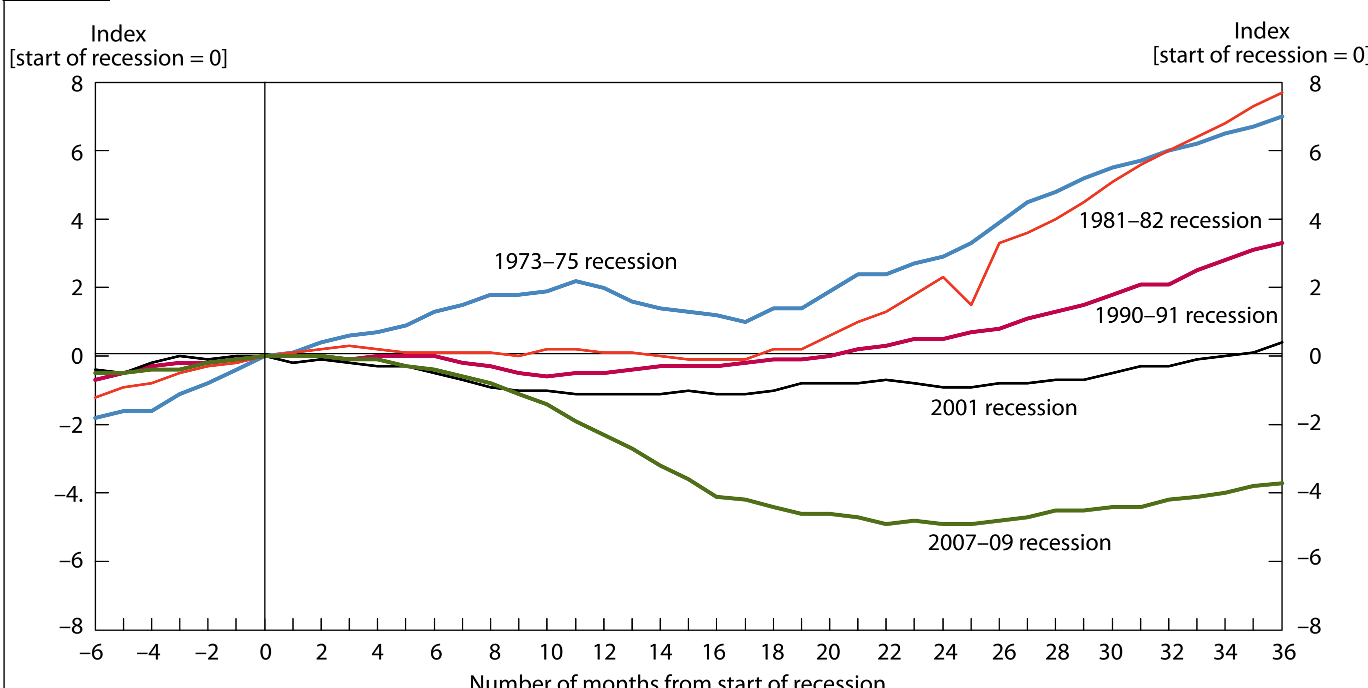
NOTE: Dashes indicate data not available.
SOURCE: Bureau of Labor Statistics, Current Employment Statistics survey.

nificant job losses during it.[26] The industry's declines in employment accelerated sharply during the latest recession. However, some areas of manufacturing did add jobs through the first 9 months of the recession. Machinery and aerospace products and parts manufacturing, both with a large share of employment dependent on exports, added jobs over that period. Growth in these two industries, however, did not withstand the deepening of the economic downturn. Nearly all manufacturing industries lost jobs over the course of the recession. Manufacturing employment fell 2.0 million, or 14.6 percent, from December 2007 through June 2009. Some of the most severe job losses were in motor vehicles and parts manufacturing, in which employment fell 35 percent during the recession.

The most recent recession was unique with regard to the breadth and depth of the employment decline in private service-providing industries. (See chart 2.) Collectively, private service-providing industries have accounted for the majority of job growth over the past 20 years and had previously avoided large job losses during recessions. As the downturn began in late 2007, employment losses spread beyond the housing-related and goods-producing industries to affect the private service-providing industries on the whole. After peaking in January 2008, employment in private services declined for the next 21 months. Virtually all private service-providing industries were affected, particularly those related to housing and autos. Financial activities, retail and wholesale trade, transportation and warehousing, information, temporary help, and leisure and hospitality all experienced their largest sustained job losses on record.[27]

Few industries attracted as much attention during the recent downturn as financial activities. Before the downturn, the financial industry expanded rapidly for several years as credit and other financial markets grew.[28] As the housing market weakened in 2006, however, job growth in financial activities faltered. Employment in that industry peaked in December—1 year before the official start of the recession. The industry shed 126,000 jobs in 2007. Initially, employment losses were relatively modest and contained in those industries within finance that are most closely connected to housing. However, by September 2008, losses had spread throughout the industry; virtually every component of finance was affected by the financial crisis. Job losses in finance continued after the recession ended. Before 2007, the only recession (since 1939) to see job losses

Chart 2. Employment in private service-providing industries, seasonally adjusted



NOTE: Business cycle peaks are determined by the National Bureau of Economic Research.
SOURCE: Bureau of Labor Statistics, Current Employment Statistics survey.

in financial activities was that of 1990–91, when the industry was struggling with the savings and loan crisis.

Outside of finance, retail trade and leisure and hospitality—consumer-oriented industries—experienced record employment declines.[29] During the recession, these industries lost 1.0 million and 454,000 jobs, respectively. As incomes and wealth declined during this period, consumers increased their savings rates and reduced spending on discretionary purchases such as consumer electronics, travel, and restaurant meals.[30]

Employment in professional and business services, a broad industry which includes a variety of services—from administrative and waste services to accounting and bookkeeping—declined by over 1.6 million during the most recent recession. In absolute terms, this decline was second only to that in manufacturing, and represented a sharp reversal from the robust growth in employment during the preceding 5 years. Roughly half of the losses occurred within the temporary help services industry, which is widely viewed as an indicator of coming trends in overall nonfarm employment. Temporary help employment peaked in August 2006, 17 months before the peak in total nonfarm employment, and started adding jobs 6 months before overall employment reached its trough.

Education and health services was by far the largest private industry, as measured by employment, to add jobs during the recession. Employment in education and health services has grown regardless of the business cycle phase for more than 30 years. This industry provides critical services to an ever-growing population. Despite the gains, the industry was not completely immune to the recession; its rate of employment growth slowed from its rate of growth in the 3 years preceding the recession.

At its lowest point in October 2009, employment in private service-providing industries had fallen by 4.6 million from its previous high in January 2008, the steepest decline in the history of the series. Employment losses in private service-providing industries were also unprecedented with regard to their share of total nonfarm employment losses. In previous downturns, private services typically have accounted for around one-quarter of total nonfarm employment losses. In the recent downturn, however, they accounted for nearly half of the total decline, well above the previous record.

Overall, government employment grew during the 2007–09 recession. Federal Government employment (excluding temporary Census workers) grew by 48,000 from December 2007 through June 2009. State and local governments added jobs during the first several months of the recession, but after employment reached a high point in August 2008, they shed 68,000 jobs through the end of the recession—a decline of about 0.3 percent. (See chart 3.) Employment in State and local government tends not to fall during recessions, and job growth in these areas actually accelerated during the 1990–91 and 2001 recessions.[31]

State and local governments have less flexibility than the Federal Government to run deficits; nearly all State governments have some form of a balanced-budget requirement.[32] State tax revenues—received primarily from income, sales, and gross receipts taxes—are sensitive to the business cycle, and they began to fall on an annual basis after September 2008.[33] Falling revenues put pressure on States to cut employment, which they began to do after August 2008. In order to shore up State budgets, nearly 60 billion dollars of fiscal relief was given by the Federal Government to the States in 2009 as part of the American Recovery and Reinvestment Act. This stimulus package was also intended to help local governments stave off job cuts.[34]

Local governments, unlike State governments, did not see a drop in tax revenue. Local government tax revenues come mostly from property taxes, which continued to grow throughout the recession despite declining home values.[35] But, according to the National League of Cities, revenue growth was outpaced by spending growth in 2008 and 2009, and local governments began reducing employment after September 2008 in order to cover budget shortfalls.[36]

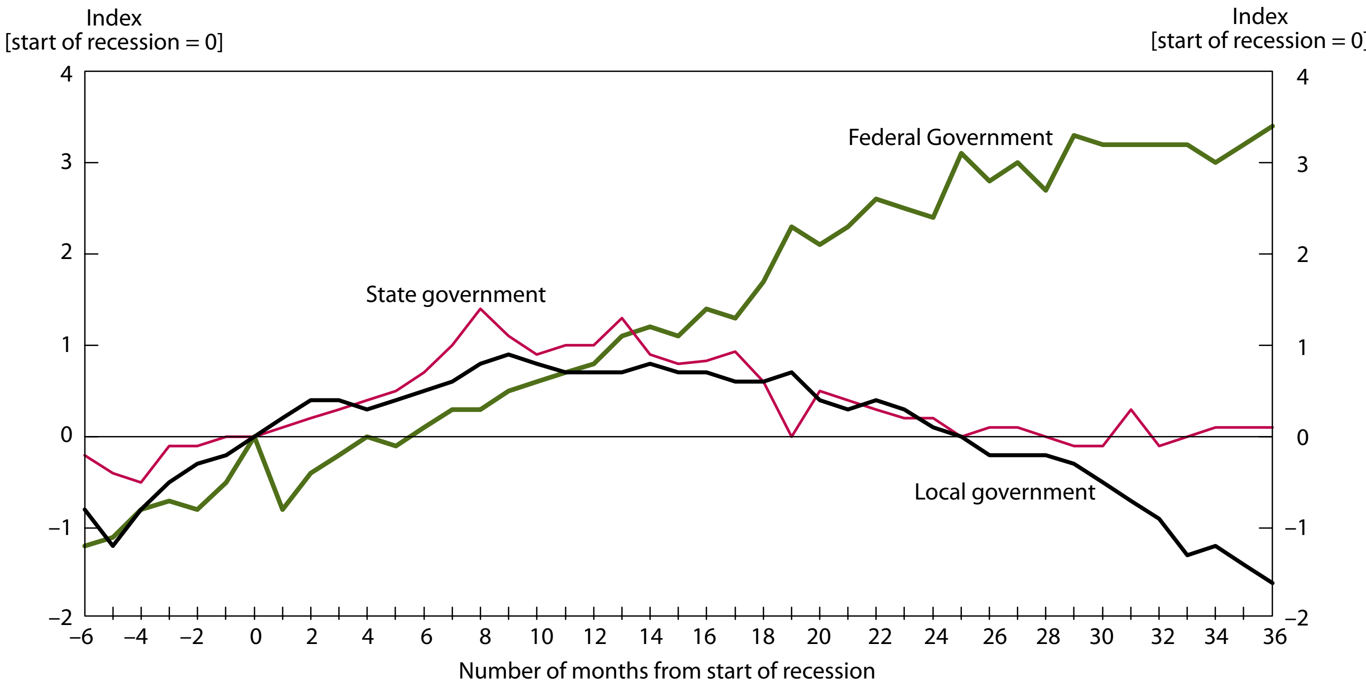
The recession led not only to employment losses, but also to cuts in workers' hours.[37] In June 2009, average weekly hours of all employees had fallen by 1 hour to 33.7 hours from the peak in June 2007. Aggregate hours, the product of employment and average weekly hours, fell by 9.8 percent between June 2007 and October 2009. As 2010 came to a close, aggregate hours were still 7.6 percentage points below their prerecession peak.

Length

The United States has experienced 11 periods of sustained employment declines since the inception of the CES survey in 1939. Large declines in employment tend to be associated with recessions. (See charts 4 and 5.) However, peaks and troughs in employment generally do not directly align with the official starting points and endpoints of recessions. Between January 2008 and February 2010, employment fell by 8.8 million—the largest absolute decline in the series' history. The previous record was 4.3 million net jobs lost from November 1944 to September 1945.

It is hard to generalize given the differences in depth and duration among employment downturns, but the

Chart 3. Federal, State, and local government employment, excluding temporary Census employment, June 2007–December 2010, seasonally adjusted



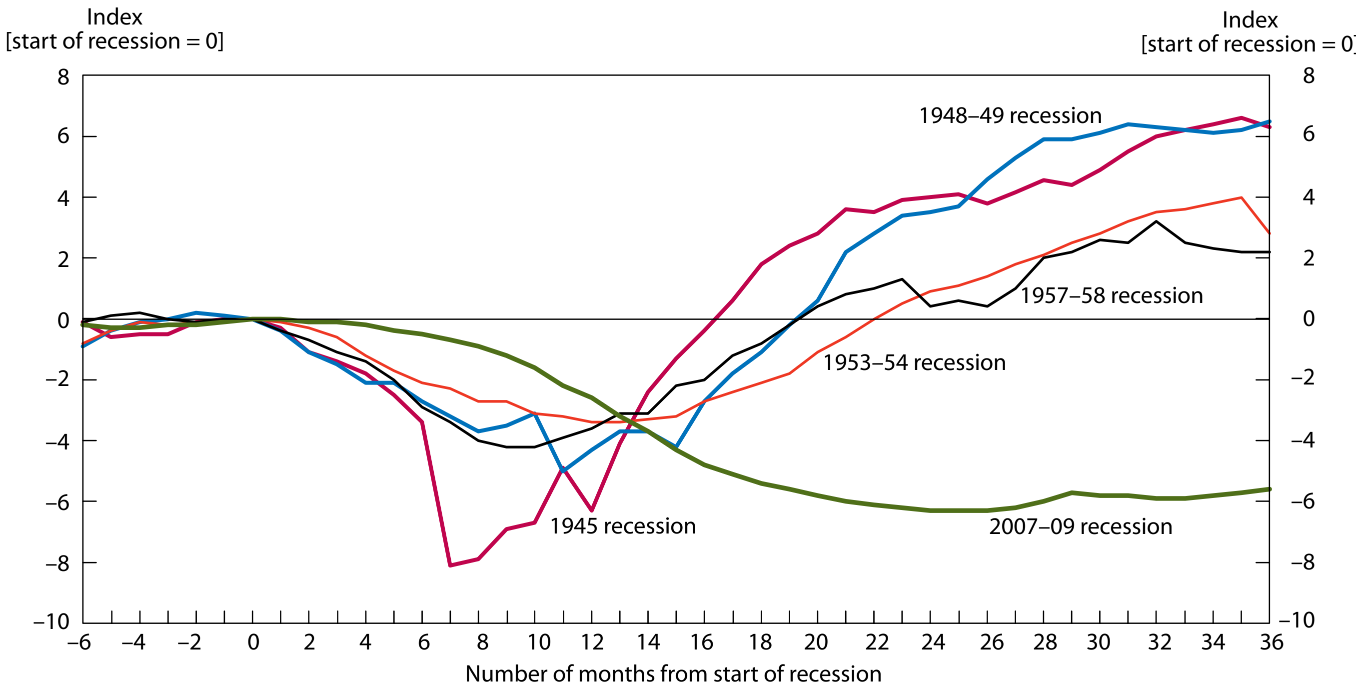
NOTE: Business cycle peaks are determined by the National Bureau of Economic Research.
SOURCE: Bureau of Labor Statistics, Current Employment Statistics survey.

average employment decline before the most recent recession resulted in a drop in employment of 3.6 percent and lasted 15 months. (See table 2). The most recent employment decline, from 2008 to 2010, was a 6.3-percent decrease and lasted 25 months. In percentage terms, the recent decline is exceeded in depth only by that which occurred as WWII was ending. Measured by duration, only the 30-month employment downturn from February 2001 to August 2003 was longer than the most recent downturn.

In addition to its depth and length, the recent downturn is unique in that it is the first on record to have erased all of the jobs gained in the previous economic expansion. This situation resulted not only from the sharp decline in employment, but also from relatively tepid job growth in the preceding expansion. From August 2003 to January 2008, employment grew by 6.3 percent, its weakest expansion since WWII. From the end of WWII to the expansion that ended in February 2001, the average employment expansion had been a gain of 17.8 percent. In February 2010, employment was 576,000 below its previous cycle low, August 2003. Before the most recent recession, at the end of boom-and-bust cycles the overall employment level had always remained well above where it started, even after the worst declines.

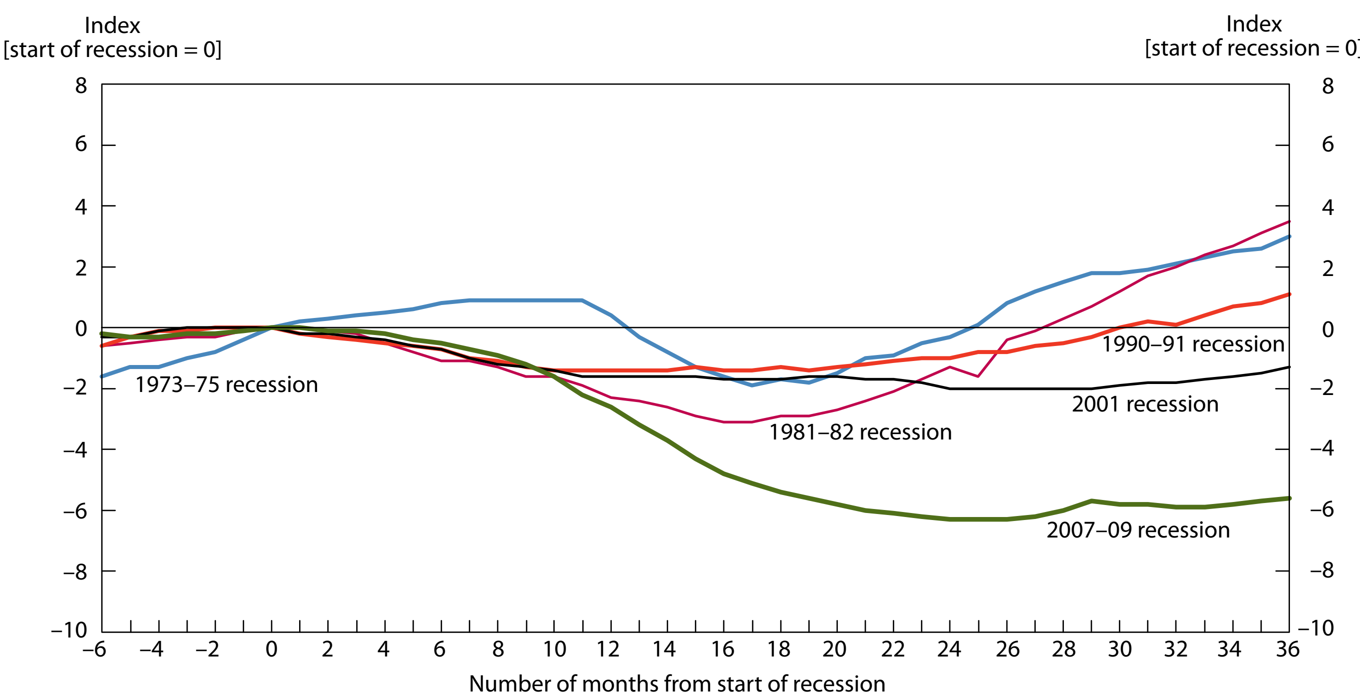
THE U.S. LABOR MARKET IS CURRENTLY RECOVERING from the deepest employment downturn since the end of World War II. Not only were there heavy losses in employment; the downturn was notable for its length and for the breadth of industries affected. The downturn started in the housing-related and good-producing industries in 2006. Over the course of 2008, the pace of declines accelerated as employment losses spread to private service-providing industries. Economic output resumed in late 2009, and employment reached a trough in February 2010. In addition to the positive signs in overall employment, there are two other measures that suggest firming in the labor market. Average weekly hours and employment in temporary help services, both traditionally viewed as precursors of nonfarm employment trends, both have increased since their lows in June 2009 and August 2009, respectively. Despite the improvements in 2010, employment remains 7.7 million jobs below its prerecession peak as of December 2010, while the economy continues to struggle with the largest employment decline since WWII. □

Chart 4. Total nonfarm employment, seasonally adjusted, selected recessions, 1945–58, and the 2007–09 recession



NOTE: Business cycle peak as determined by the National Bureau of Economic Research.
SOURCE: Bureau of Labor Statistics, Current Employment Statistics survey.

Chart 5. Total nonfarm employment, seasonally adjusted, selected recessions, 1973–2009



NOTE: Business cycle peak as determined by the National Bureau of Economic Research.
SOURCE: Bureau of Labor Statistics, Current Employment Statistics survey.

Table 2. Nonfarm expansions and contractions in employment, seasonally adjusted, 1945–2010										
Expansions					Contractions					Employment contraction as percent of expansion
Trough to peak	Change in employment (in thousands)	Percent change	Length (in months)	Annualized growth rate	Peak to trough	Change in employment (in thousands)	Percent change	Length (in months)	Annualized growth rate	
					Nov 1943–Sep 1945	–4,319	–10.1	22	–9.2	. . .
Sep 1945–Sep 1948	6,794	17.6	36	5.6	Sep 1948–Oct 1949	–2,344	–5.2	13	–4.8	34.5
Oct 1949–Jul 1953	7,586	17.7	45	4.4	Jul 1953–Aug 1954	–1,711	–3.4	13	–3.1	22.6
Aug 1954–Apr 1957	4,413	9.0	32	3.3	Apr 1957–Jun 1958	–2,326	–4.4	14	–3.8	52.7
Jun 1958–Apr 1960	3,900	7.7	22	4.1	Apr 1960–Feb 1961	–1,256	–2.3	10	–2.7	32.2
Feb 1961–Mar 1970	17,897	33.4	109	3.2	Mar 1970–Nov 1970	–1,044	–1.5	8	–2.2	5.8
Nov 1970–Jul 1974	8,225	11.7	44	3.1	Jul 1974–Apr 1975	–2,171	–2.8	9	–3.7	26.4
Apr 1975–Jul 1981	15,131	19.8	75	2.9	Jul 1981–Dec 1982	–2,838	–3.1	17	–2.2	18.8
Dec 1982–Jun 1990	21,061	23.7	90	2.9	Jun 1990–May 1991	–1,621	–1.5	11	–1.6	7.7
May 1991–Feb 2001	24,334	22.5	117	2.1	Feb 2001–Aug 2003	–2,708	–2.0	30	–.8	11.1
Aug 2003–Jan 2008	8,174	6.3	53	1.4	Jan 2008–Feb 2010	–8,750	–6.3	25	–3.1	107.0

SOURCE: Bureau of Labor Statistics, Current Employment Statistics survey.

Notes

1 Recessions are identified by the National Bureau of Economic Research (NBER). According to the NBER, the most recent recession began in December 2007 and ended in June 2009. The previous two recessions were from March 2001 to November 2001 and from July 1990 to March 1991. For a complete list of business cycle dates, consult the NBER webpage at **http://www.nber.org/cycles/cyclesmain.html** (visited Nov. 2, 2010).

2 The data on employment used in this article are from the CES survey, which is a monthly survey of approximately 140,000 nonfarm businesses and government agencies representing approximately 440,000 individual worksites. For more information on the CES program's methods, see "Technical Notes to Establishment Survey Data Published in Employment and Earnings" at **http://www.bls.gov/web/cestn2.htm** (visited Mar. 31, 2011). CES data are available at **http://www.bls.gov/ces** (visited Mar. 31, 2011). The CES data used in this article are seasonally adjusted unless otherwise noted.

3 The current CES monthly total nonfarm payroll employment series goes back to January 1939.

4 The term "Great Recession" has been used in numerous publications and is now considered an accepted term by the Associated Press.

5 The data on unemployment rates used in the article are from the Current Population Survey (CPS). CPS data are available at **http://www.bls.gov/cps** (visited Mar. 31, 2011). The CPS data used in the article are seasonally adjusted unless otherwise noted.

6 Housing is not a defined industry. Activity related to the housing market cuts across a variety of industries and includes activities such as residential construction, financial activities, manufacturing, and retail sales.

7 For a complete overview of health care employment trends, see Catherine A. Wood, "Employment in health care: a crutch for the ailing economy during the 2007–09 economy," *Monthly Labor Review*, this issue, pp. 13–18.

8 Richard K. Green, "Follow the Leader: How Changes in Residential and Non-residential Investment Predict Changes in GDP," Real Estate Economics, June 1997, pp. 253–70. This article looks at the relationship between GDP and residential investment and nonresidential investment. Green finds that residential investment tends to begin rising before the trough of the business cycle begin falling before the peak. Nonresidential investment lags the overall business cycle and appears to be more a symptom than a cause of economic downturns.

9 Data on new housing starts, permits, and home sales are produced by the U.S. Census Bureau. For more information on starts and permits, see **http://www.census.gov/const/www/newresconstindex.html** (visited Dec. 22, 2010). For more information on new home sales levels and prices, see **http://www.census.gov/const/www/newressalesindex.html** (visited Dec. 22, 2010).

10 Eric Belsky and Joel Prakken, *Housing Wealth Effects: Housing's Impact on Wealth Accumulation, Wealth Distribution and Consumer Spending* (Cambridge, Mass., Harvard University, Joint Center for Housing Studies, 2004), **http://www.jchs.harvard.edu/publications/finance/w04-13.pdf** (visited Mar. 31, 2011). BusinessDictionary.com defines the wealth effect as "changes in aggregate demand caused by change in the value of assets such as stocks, bonds, gold, property" and explains, "Increase in the market value of these assets induces a feeling of being 'richer' in their owners (even if no additional cash is realized) and often tends to encourage spending and to dampen savings." See **http://www.businessdictionary.com/definition/wealth-effect.html** (visited Dec. 22, 2010).

11 Data on U.S. household real estate assets are from the Federal

Reserve's Flow of Funds release. See **http://www.federalreserve.gov/RELEASES/z1/Current/z1r-5.pdf** (visited Dec. 19, 2010). The net worth of households and nonprofit organizations rose by 39.9 percent between 2003 and 2006.

[12] Alan Greenspan and James Kennedy, *Sources and Uses of Equity Extracted from Homes* (Washington, DC, Board of Governors of the Federal Reserve System, March 2007), **http://www.federalreserve.gov/pubs/FEDS/2007/200720/200720pap.pdf** (visited Dec. 15, 2010); see table 2 on pp. 16–25.

[13] Belsky and Prakken, *Housing Wealth Effects*.

[14] **http://www.census.gov/const/www/newresconstindex.html**.

[15] Data on delinquency are from the Mortgage Bankers Association's National Delinquency Survey. See **http://www.mbaa.org/ResearchandForecasts/ProductsandSurveys/NationalDelinquencySurvey.htm** (visited Mar. 31, 2011).

[16] Danielle DiMartino and John V. Duca, "The Rise and Fall of Subprime Mortgages," *Economic Letter—Insights from the Federal Reserve Bank of Dallas*, November 2007, **http://www.dallasfed.org/research/eclett/2007/el0711.html** (visited Jan. 7, 2011).

[17] James D. Hamilton, *Causes and Consequences of the Oil Shock of 2007–08* (Washington, DC, Brookings Institution, February 2009, revised March 2009), **http://www.brookings.edu/economics/bpea/~/media/Files/Programs/ES/BPEA/2009_spring_bpea_papers/2009_spring_bpea_hamilton.pdf** (visited Mar. 31, 2011). Crude oil prices are from the Bureau of Labor Statistics Producer Price Index program, series WPU056, and were extracted on Dec. 23, 2010.

[18] Table 2.3.1, "Percent Change From Preceding Period in Real Personal Consumption Expenditures by Major Type of Product" (Bureau of Economic Analysis, National Income and Product Accounts), **www.bea.gov/national/nipaweb/TableView.asp?SelectedTable=61&Freq=Qtr&FirstYear=2008&LastYear=2010** (visited Dec. 23, 2010).

[19] Hamilton, *Causes and Consequences of the Oil Shock of 2007–08*.

[20] For an overview of mining employment trends, see Brian Davidson, "Mining employment trends of 2007–09: a question of prices," *Monthly Labor Review*, this issue, pp. 19–23.

[21] Both the 1990–91 and 2001 recessions lasted 8 months, but employment continued to decline after the end of both recessions.

[22] Data on lending standards are available from the Federal Reserve Board's Senior Loan Officer Opinion Survey on Bank Lending Practices. See **http://www.federalreserve.gov/boarddocs/snloansurvey/** (visited Mar. 31, 2011).

[23] The CES 1-month diffusion index measures the dispersion of employment change across industries over the month. The overall index is calculated from 267 seasonally adjusted employment series (primarily 4-digit NAICS industries) covering all nonfarm payroll employment in the private sector. To derive the index, each component industry is assigned a value of 0 percent, 50 percent, or 100 percent, depending on whether its employment showed a decrease, no change, or an increase, respectively, over the month. The average value (mean) is then calculated, and this percent is the diffusion index number.

[24] For an overview of trends in construction employment, see Adam Hadi, "Construction employment peaks before the recession and falls sharply throughout it," *Monthly Labor Review*, this issue, pp. 24–27.

[25] Nonresidential construction spending is based upon the Bureau of Economic Analysis's nonresidential structures investment component of GDP. See Table 1.1.6, "Real Gross Domestic Product, Chained Dollars" (Bureau of Economic Analysis), line 8, **http://www.bea.gov/national/nipaweb/TableView.asp?SelectedTable=6&FirstYear=2009&LastYear=2010&Freq=Qtr** (visited Jan. 8, 2011).

[26] For a complete overview of manufacturing employment trends, see Megan M. Barker, "Manufacturing employment hard hit during the 2007–09 recession," *Monthly Labor Review*, this issue, pp. 28–33.

[27] For an overview of temporary help employment trends, see Frank Conlon, "Professional and business services: employment trends in the 2007–09 recession," *Monthly Labor Review*, this issue, pp. 34–39.

[28] For an overview of trends in financial activities employment, see George Prassas, "Employment in financial activities: double billed by housing and financial crises," *Monthly Labor Review*, this issue, pp. 40–44.

[29] For an overview of retail trends, see Michael D. McCall, "Deep drop in retail trade employment during the 2007–09 recession," *Monthly Labor Review*, this issue, pp. 45–48. For an overview of trends in leisure and hospitality employment, see Eliot Davila, "Employment in leisure and hospitality departs from historical trends during 2007–09 recession," *Monthly Labor Review*, this issue, pp. 49–52.

[30] "Off their trolleys," *The Economist*, May 7, 2009, **http://www.economist.com/finance/displaystory.cfm?story_id=13611284** (visited Dec. 22, 2010).

[31] Julie Hatch, "Employment in the public sector: two recessions' impact on jobs," *Monthly Labor Review*, October 2004, pp. 38–47, **http://www.bls.gov/opub/mlr/2004/10/art3full.pdf** (visited Apr. 4, 2011).

[32] See "NCSL Fiscal Brief: State Balanced Budget Provisions" (Washington, DC, National Conference of State Legislatures, October 2010), **http://www.ncsl.org/documents/fiscal/StateBalancedBudgetProvisions2010.pdf** (visited Jan. 12, 2010).

[33] "Quarterly Summary of State and Local Tax Revenue" (U.S. Census Bureau), **http://www.census.gov/govs/qtax/** (visited Jan. 12, 2011).

[34] *The Economic Impact of the American Recovery and Reinvestment Act of 2009, Second Quarterly Report* (Washington, DC, Council of Economic Advisors, Jan. 13, 2010), p. 10, **http://www.recovery.gov/About/Documents/100113-economic-impact-arra-second-quarterly-report.pdf** (visited Dec. 23, 2010); Christopher W. Hoene and Michael A. Pagano, "City Fiscal Conditions in 2009" and "City Fiscal Conditions in 2010" (Washington, DC, National League of Cities) **http://www.nlc.org/ASSETS/E0A769A03B464963A81410F40A0529BF/CityFiscalConditions_09%20(2).pdf** and **http://www.nlc.org/ASSETS/AE26793318A645C795C9CD11DAB3B39B/RB_CityFiscalConditions2010.pdf** (visited Jan. 12, 2011). Municipalities rely on State funding for about 12 percent of their budgets.

[35] "Quarterly Summary of State and Local Tax Revenue." Local tax revenues were calculated as the difference between the national total of State and local government tax revenue and the national total of State tax revenue.

[36] "City Fiscal Conditions in 2009" and "City Fiscal Conditions in 2010." The years referred to are the 2008 and 2009 fiscal years, as defined by individual municipal corporations.

[37] For an overview of trends in average weekly hours, see Steven Kroll, "The decline in work hours during the 2007–09 recession," *Monthly Labor Review*, this issue, pp. 53–59.