The decline in work hours during the 2007–09 recession

Average weekly hours for employees in private industry decreased across all industries; hours were pulled down further as a result of heavy job losses in industries with above-average workweeks

Steven Kroll

The average workweek for all employees on private nonagricultural payrolls decreased by 0.9 hour during the December 2007–June 2009 recession. Aggregate weekly hours, the product of employment and average weekly hours, fell even more. Both the workweek and aggregate hours peaked 6 months prior to the business cycle, which reached its high point in June 2007. Average weekly hours bottomed out in June 2009; however, aggregate weekly hours lagged the end of the recession, with its trough not occurring until October 2009.[1] (See chart 1.) Goods-producing industries experienced steeper declines in both job loss and the average workweek than their private service-providing counterparts.

Hours data for all employees were first published in 2007, so such data cannot be used to compare the 2007–09 recession with past recessions. Hours and employment of production and nonsupervisory employees (together, production workers), who represent about 80 percent of all employees, allow historical comparisons back to 1964. As in previous recessions, in the recent recession goods-producing industries experienced steeper employment losses and sharper declines in the average weekly hours of production workers than did service-providing industries. Still, although less sensitive to the most recent cyclical downturn than the goods-producing sector, the private service-providing sector exhibited substantially greater reductions in hours for production workers than in past recessions. Indeed, decreases in aggregate weekly hours in service industries were 4 times greater than in any previous recession dating back to 1973.

As 2010 came to a close, neither the average workweek nor aggregate weekly hours had recovered to their prerecession levels.

Hours and the business cycle

Average weekly hours of production workers in manufacturing are viewed as a leading indicator in the business cycle. In theory, when demand for their goods or services changes, businesses are more likely to adjust worker hours before hiring or laying off workers. Therefore, changes in average weekly hours can signal increases or decreases in overall economic activity. Average weekly hours of production workers in manufacturing are currently a component of the leading index published by The Conference Board.[2]

Aggregate weekly hours of all employees are defined as the product of average weekly hours of all employees and total number of employees.[3] The total number of employees is currently a component of the coincident index published by The Conference Board. Because aggregate weekly hours are weighted by employment, they exhibit a tendency to move coincidentally with the business cycle.

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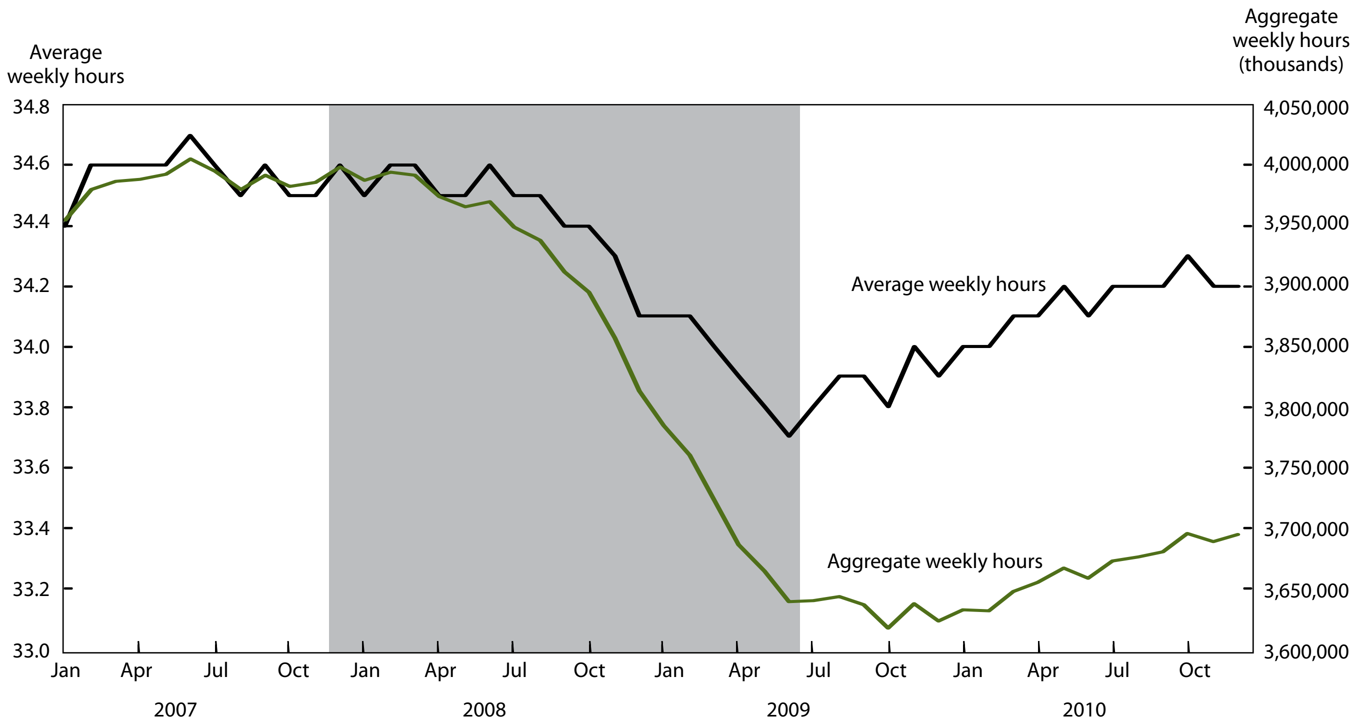
Chart 1. **Average weekly hours and aggregate weekly hours, all private employees, seasonally adjusted, January 2007–December 2010**



SOURCE: U.S. Bureau of Labor Statistics.

Industry-level analysis of aggregate weekly hours helps to identify the industries that drive changes to the top-level estimate of the average number of hours in the workweek. Changes in this average at the total private level are driven by changes in industries' employment levels and average workweek hours. When workers employed in industries with higher-than-average workweek hours are laid off disproportionately, all else remaining equal, the loss of their hours applies downward pressure on total hours worked in private industry during the workweek. Conversely, when workers are laid off in industries with lower-than-average workweeks, upward pressure is applied to the total private estimate. Finally, if all employees, on average, are getting paid for fewer work hours, downward pressure on total private hours is applied.[4]

Drop in hours during the recession

During the 2007–09 recession, average weekly hours for all employees on private nonagricultural payrolls decreased by 0.9 hour, or 2.6 percent, while aggregate weekly hours fell more steeply, by 9.1 percent. (See table 1.) The goods-producing sector experienced significant declines in both average weekly hours and employment levels. Because total private average weekly hours are weighted by industry employment, both the very large employment losses and the decreases in the workweek in goods-producing industries pulled down the average workweek for all private sector industries.

Average weekly hours for construction fell by 1.1 hours. Although construction experienced the smallest reduction in average weekly hours among goods-producing industries during the recession, heavy job losses in the sector led to the largest relative reduction in aggregate weekly hours in the economy: total weekly hours in construction dropped by 22.1 percent. Aggregate weekly hours in construction declined 31.1 percent from a peak in December 2006 to a trough in February 2010.

Average weekly hours for manufacturing fell by 1.5 hours, or 3.7 percent, during the recession. From peak to trough, aggregate weekly hours decreased substantially more, by 17.8 percent, more than one-quarter of the decrease in aggregate weekly hours for the entire economy. Close to three-quarters of the reduction in aggregate weekly hours for manufacturing occurred in durable goods industries, in which transportation equipment, machin-

Table 1. Changes in employment and hours, all employees, by industry, December 2007– June 2009

Industry	All employees			Average weekly hours			Aggregate hours		
	Change in level (thousands)	Percent change	Change in percent distribution	December 2007 level	Change in level	Percent change	Change in level (thousands)	Percent change	Change in percent distribution
Total private	–7,670	–6.6	100.0	34.6	–0.9	–2.6	–362,525	–9.1	100.0
Goods producing	–3,550	–16.2	46.3	39.7	–1.4	–3.5	–166,719	–19.1	46.0
Mining and logging	–54	–7.3	.7	44.3	–2.5	–5.6	–4,107	–12.5	1.1
Construction	–1,484	–19.8	19.3	38.3	–1.1	–2.9	–63,440	–22.1	17.5
Manufacturing	–2,012	–14.6	26.2	40.2	–1.5	–3.7	–98,474	–17.8	27.2
Service providing	–4,120	–4.4	53.7	33.4	–.6	–1.8	–191,320	–6.1	52.8
Wholesale trade	–458	–7.6	6.0	38.4	–.6	–1.6	–20,939	–9.0	5.8
Retail trade	–1,047	–6.7	13.7	31.7	–.6	–1.9	–41,922	–8.5	11.6
Transportation and warehousing	–333	–7.3	4.3	38.5	–.5	–1.3	–14,928	–8.5	4.1
Utilities	4	.6	.0	42.1	–1.6	–3.8	–745	–3.2	.2
Information	–229	–7.6	3.0	36.3	.1	.3	–8,033	–7.3	2.2
Financial activities	–473	–5.8	6.2	36.6	–.3	–.8	–19,637	–6.5	5.4
Professional and business services	–1,608	–8.9	21.0	35.3	–.3	–.8	–61,696	–9.7	17.0
Education and health services	619	3.3	–8.1	33.6	–.8	–2.4	5,459	.9	–1.5
Leisure and hospitality	–454	–3.4	5.9	26.1	–.6	–2.3	–19,700	–5.6	5.4
Other services	–140	–2.5	1.8	32.7	–1.2	–3.7	–11,027	–6.1	3.0

SOURCE: U.S. Bureau of Labor Statistics.

ery, and fabricated metal in turn accounted for more than half of the decrease in hours. The sharp drop in aggregate weekly hours for durable goods industries is attributable to large cuts in payroll employment. Employment in transportation equipment fell in excess of 20 percent during the recent recession, the largest net reduction in aggregate hours in durable goods and the decline that contributed the most to employment losses in manufacturing.[5]

Among nondurable industries, the steepest decline was experienced in plastics and rubber products manufacturing, which accounted for one-quarter of the reduction in aggregate hours in those industries. Primarily responsible for the fall in aggregate weekly hours in plastics and rubber products manufacturing were decreases in employment.

For production workers in manufacturing, average weekly hours fell by 1.5 hours (see table 2), at least twice the drop posted in each of the previous two recessions. Historically viewed as a leading economic indicator of the business cycle, the workweek for manufacturing production workers was not as prescient a harbinger of the most recent recession: average weekly hours did not consistently fall below the 2007 average until September 2008, a full 9 months after the beginning of the recession.

Within service-providing industries, utilities and other services (repair services, personal services, and membership organizations) experienced the largest nominal and relative declines in average weekly hours. Among private service-providing industries, the information sector experienced no reduction in the average workweek during the recession.

Service industry employers responded in different ways to meet their labor needs during the recession. In some industries, employers were more likely to shorten the workweek and maintain their payroll employment levels; in others, employers trimmed employment. For example, the average workweek for professional and business services was shortened by 0.8 percent, but aggregate hours dropped by 9.7 percent, the largest decline within the private service sector. (See table 1.) The large drop in aggregate weekly hours relative to the small decrease in average weekly hours illustrates employers' tendency to cut payroll employment rather than hours. Retail trade, wholesale trade, financial activities, and transportation and warehousing also exhibited this trend.

Elsewhere in the service-providing sector, other industries relied more on reduced hours than on laying off personnel. Although average weekly hours in utilities dropped 3.8 percent, employment held relatively steady and aggregate weekly hours fell by only 3.2 percent, the smallest decline among service industries. Within private education and health services, job gains more than offset decreases in the workweek, resulting in increases in aggregate hours.

Among the service-providing industries, aggregate weekly hours fell by 9.7 percent, accounting for more than one-sixth of the decrease in private sector hours during the recession. Employment services, architectural and engineering services, and services to building and dwellings contributed most to the decline.

Financial activities experienced a small decrease in the average workweek during the recent recession. Declines in aggregate weekly hours were attributable primarily to decreases in employment. Credit intermediation and related activities accounted for more than one-half of the decrease in aggregate weekly hours for financial activities from December 2007 to June 2009.

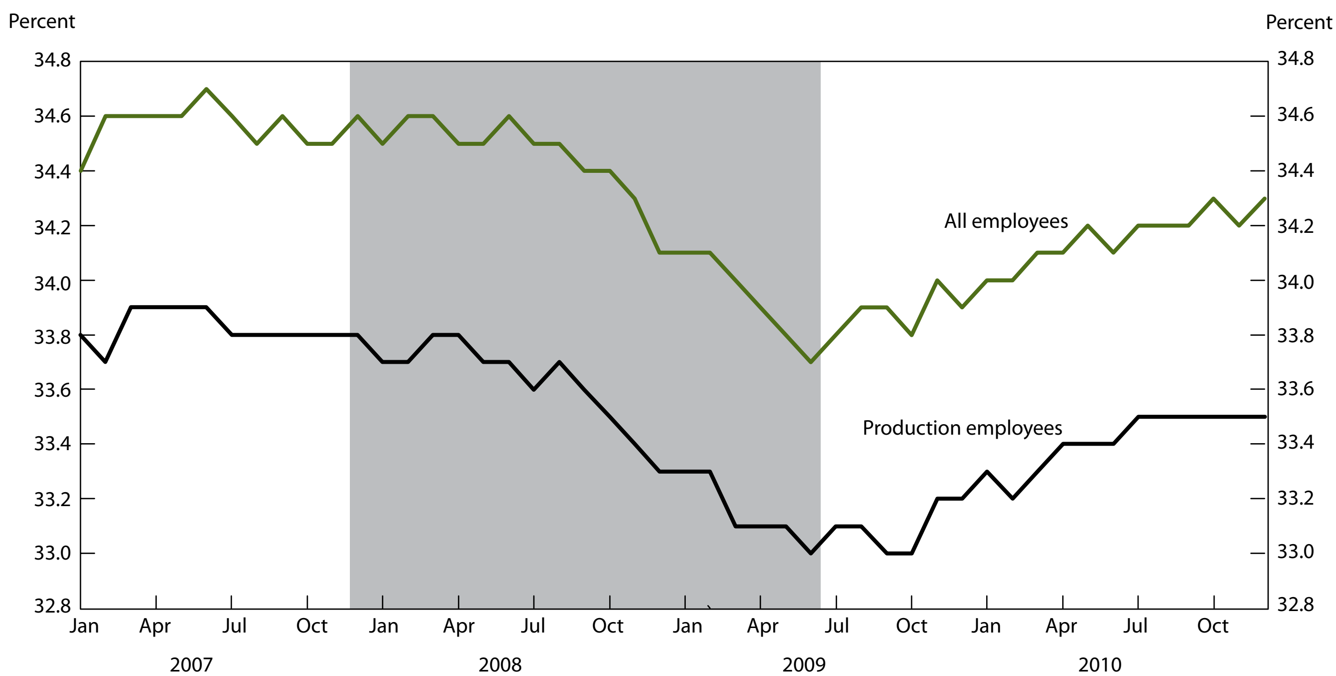
Three recessions compared

Hours data for all employees start in 2006; therefore, such data cannot be used to compare the 2007–09 recession with past recessions. Fortunately, monthly changes in average weekly hours for all employees track changes in average weekly hours for production workers. (See chart 2.) Because production workers are about 80 percent of all employees, historical comparisons of hours data for these workers can be made back to 1964.

Reductions in average weekly hours for production workers were greater during the 2007–09 recession than during the 1990–91 recession or the 2001 recession. The average workweek for all such workers in private industry declined 2.1 percent, far more than the drop of 0.9 percent experienced during each of the two earlier recessions.

Holding to historical trends, decreases in average weekly hours for goods-producing industries during the 2007–09 recession were substantially greater than the decreases in hours of most of their service-providing counterparts. However, the average workweek for the private service-providing sector did fall more in the 2007–09

Chart 2. Average weekly hours, all employees and production employees, seasonally adjusted, January 2007– December 2010



SOURCE: U.S. Bureau of Labor Statistics.

recession than during the earlier two downturns. The average workweek in the service sector fell by 0.3 percent during the 1990–91 recession; the drop quadrupled to 1.2 percent in the most recent recession. Comparing hours in service-producing industries in all three recessions reveals that, among the service-producing industries, the percent decrease in the workweek for education and health services, transportation and warehousing, and the catchall category of other services was greater in the 2007–09 recession than in the other two recessions.

Professional and business services exhibited a smaller drop in average weekly hours during the 2007–09 recession than during the 2001 recession. However, when job loss is taken into account, aggregate weekly hours for production workers in professional and business services fell by 9.7 percent in the recent recession, the greatest percent loss among all private service industries and a larger decline than in all other recessions.

Interesting trends emerge from a comparison of the decreases in aggregate weekly hours by industry for the three recessions. (See table 3.) Financial activities, a prominent player in the most recent recession, was not immune from the business cycle: from December 2007 to June 2009, aggregate hours in the industry decreased by 4.4 percent, much weaker than the modest growth seen in the previous two recessions. In the construction and retail trade industries, the fall in aggregate weekly hours during the 2007–09 recession was greater than the 1990–91 decline in each of those industries and greater still than the decreases they experienced during the 2001 recession.

The industries that brought down the total private average workweek during the most recent recession were mostly the same ones that did so in the past. Manufacturing, construction, professional and business services, and retail trade were largely responsible for the decrease in the workweek in both the 2007–09 recession and the 1990–91 recession. Manufacturing and professional and business services accounted for a majority of the fall in total private average weekly hours during the 2001 recession.

Work hours after the recession

Since reaching a trough of 33.7 hours in October 2009, the average number of hours worked per week by all pri-

Table 2. Changes in employment and hours, all nonsupervisory and production employees, by industry, December 2007–June 2009

Industry	Production employees			Average weekly hours			Aggregate hours		
	Change in level (thousands)	Percent change	Change in percent distribution	December 2007 level	Change in level	Percent change	Change in level (thousands)	Percent change	Change in percent distribution
Total private	–6,463	–6.8	100.0	33.8	–0.8	–2.4	–289,548	–9.0	100.0
Goods producing	–3,012	–18.5	46.6	40.6	–1.6	–3.9	–143,502	–21.7	49.6
Mining and logging	–54	–9.7	.8	45.9	–2.8	–6.1	–3,892	–15.2	1.3
Construction	–1,245	–21.5	19.3	39.1	–1.5	–3.8	–55,505	–24.5	19.2
Manufacturing	–1,713	–17.3	26.5	41.1	–1.5	–3.6	–82,711	–20.3	28.6
Service providing	–3,451	–4.4	53.4	32.4	–.4	–1.2	–142,058	–5.5	49.1
Wholesale trade	–399	–8.2	6.2	38.2	–.6	–1.6	–17,948	–9.6	6.2
Retail trade	–919	–6.9	14.2	30.1	–.3	–1.0	–31,412	–7.8	10.8
Transportation and warehousing	–286	–7.2	4.4	36.8	–1.1	–3.0	–14,567	–10.0	5.0
Utilities	6	1.4	–.1	42.8	–1.0	–2.3	–190	–1.0	.1
Information	–179	–7.4	2.8	36.3	.1	.3	–6,274	–7.2	2.2
Financial activities	–308	–4.9	4.8	35.7	.2	.6	–9,798	–4.4	3.4
Professional and business services	–1,467	–9.9	22.7	34.8	–.1	–.3	–52,392	–10.1	18.1
Education and health services	610	3.8	–9.4	32.6	–.4	–1.2	13,156	2.5	–4.5
Leisure and hospitality	–406	–3.4	6.3	25.3	–.6	–2.4	–17,210	–5.7	5.9
Other services	–103	–2.2	1.6	30.9	–.5	–1.6	–5,430	–3.8	1.9

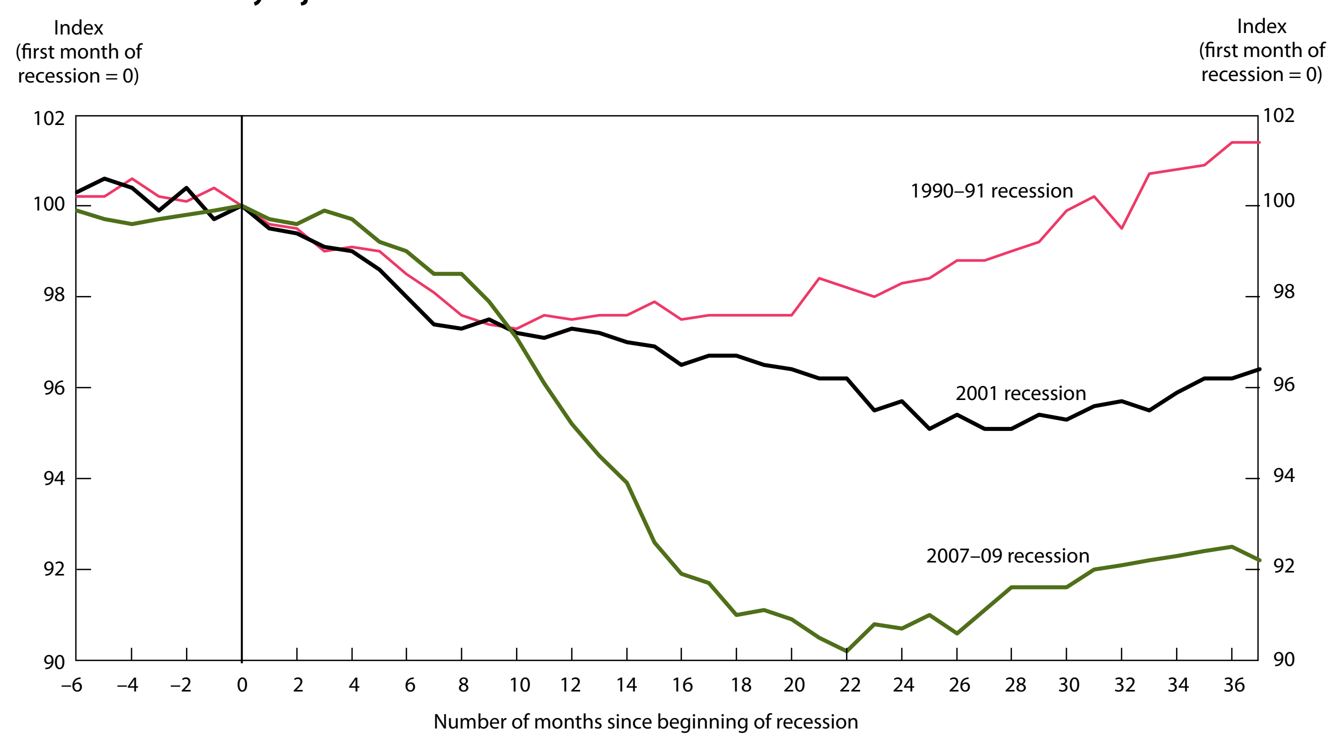
SOURCE: U.S. Bureau of Labor Statistics.

Table 3. Changes in aggregate weekly hours of nonsupervisory and production employees from beginning to end of recession, three recessions, by industry, 1990–2009

Industry	1990–91 recession			2001 recession			2007–09 recession		
	Change in level (thousands)	Percent change	Change in percent distribution	Change in level (thousands)	Percent change	Change in percent distribution	Change in level (thousands)	Percent change	Change in percent distribution
Total private	−59,804	−2.4	100.0	−83,170	−2.7	100.0	−289,548	−9.0	100.0
Goods producing	−41,396	−6.0	69.2	−45,494	−6.3	54.7	−143,502	−21.7	49.6
Mining and logging	−445	−1.8	.7	−496	−2.4	.6	−3,892	−15.2	1.3
Construction	−13,799	−8.8	23.1	−4,184	−2.0	5.0	−55,505	−24.5	19.2
Manufacturing	−26,924	−5.2	45.0	−41,284	−8.4	49.6	−82,711	−20.3	28.6
Service providing	−13,419	−.7	22.4	−35,542	−1.5	42.7	−142,058	−5.5	49.1
Wholesale trade	−1,671	−1.0	2.8	−4,593	−2.6	5.5	−17,948	−9.6	6.2
Retail trade	−9,233	−2.7	15.4	−4,102	−1.0	4.9	−31,412	−7.8	10.8
Transportation and warehousing	−1,281	−1.2	2.1	−8,127	−5.8	9.8	−14,567	−10.0	5.0
Utilities	−191	−.8	.3	−451	−2.2	.5	−190	−1.0	.1
Information	−206	−.3	.3	−3,090	−3.3	3.7	−6,274	−7.2	2.2
Financial activities	316	.2	−.5	1,428	.7	−1.7	−9,798	−4.4	3.4
Professional and business services	−6,445	−2.1	10.8	−26,103	−5.5	31.4	−52,392	−10.1	18.1
Education and health services	9,900	3.2	−16.6	11,434	2.6	−13.7	13,156	2.5	−4.5
Leisure and hospitality	−3,642	−1.7	6.1	−5,065	−1.8	6.1	−17,210	−5.7	5.9
Other services	−650	−.6	1.1	2,097	1.5	−2.5	−5430	−3.8	1.9

SOURCE: U.S. Bureau of Labor Statistics.

Chart 3. Index of aggregate weekly hours, all private nonsupervisory and production employees, seasonally adjusted



SOURCE: U.S. Bureau of Labor Statistics.

vate sector employees has rebounded to 34.3 hours, or 0.4 hour below the level observed at the start of the recession. In response to the increase in economic activity seen since the third quarter of 2009, employers have exhibited a tendency to extend the average workweek, as opposed to expanding payroll employment to match increased demand.[6] Still, even with the steady progress of average weekly hours now being made toward reaching prerecession levels, growth in aggregate weekly hours has been much slower: through December 2010, aggregate weekly hours remained 7.7 percent below the December 2007 level. (See chart 3.) □

Notes

[1] Recessions are identified by the National Bureau of Economic Research (NBER). For information, see "Information on Recessions and Recoveries, the NBER Business Cycle Dating Committee, and related topics" (Cambridge, MA, National Bureau of Economic Research, updated daily), **http://www.nber.org/cycles/main.html** (visited Dec. 13, 2010). The data on employment, hours, and earnings used in this article are from the Current Employment Statistics (CES) survey, a monthly survey of about 140,000 nonfarm businesses and government agencies representing about 440,000 establishments. For more information on the survey's concepts and methodology, see *BLS Handbook of Methods*, chapter 2, "Employment, Hours, and Earnings from the Establishment Survey" (U.S. Bureau of Labor Statistics, no date), **http://www.bls.gov/opub/hom/pdf/homch2.pdf** (visited Dec. 13, 2010). To access CES data, see "Current Employment Statistics - CES (National)" (U.S. Bureau of Labor Statistics, no date), **http://www.bls.gov/ces** (visited Dec. 13, 2010). Data used in this article are seasonally adjusted unless otherwise noted.

[2] The Conference Board is a global, independent business membership and research association. To access the Board's coincident and leading index data, see "Global Business Cycle Indicators," **http://www.conference-board.org/data/bcicountry.cfm?cid=1** (visited Apr. 11, 2011).

The Bureau of Labor Statistics produces data on hours and earnings of production and nonsupervisory employees in the private sector. The definition of "production and nonsupervisory employees" varies by industry. Employment, hours, and earnings estimates are for production employees in manufacturing and in mining and logging, construction workers in construction, and nonsupervisory employees in private service-providing industries. Production workers as a percentage of all workers have remained fairly constant, at about 80 percent over the years. Therefore, it is safe to assume that employment trends of production workers track overall employment trends in each industry supersector. (See chart 2; see also *North American Industry Classification System: United States, 1997* (U.S. Census Bureau, 1997), and *North American Industry Classification System, 2002* (U.S. Census Bureau, 2002), for a definition of "supersector."

[3] Aggregate weekly hours for production workers are defined analogously to aggregate weekly hours for all employees. Aggregate weekly hours for production workers is the product of average weekly hours for production workers and number of production workers.

[4] Material on the industry-level analysis of hours in this paragraph is taken largely from Julie Hatch Maxfield, "Jobs in 2005: How do they compare with their March 2001 counterparts," *Monthly Labor Review*, July 2006, pp. 15–26 (see especially pp. 17–18), **http://www.bls.gov/opub/mlr/2006/07/art2full.pdf**.

[5] For more information about employment in manufacturing, see Megan M. Barker, "Manufacturing employment hard hit during the 2007–09 recession," this issue, pp. 28–33.

[6] The Bureau of Economic Analysis produces and publishes estimates of gross domestic product. Real gross domestic product has been increasing steadily since the third quarter of 2009. For more information, see "National Income and Product Accounts Table" (Bureau of Economic Analysis, Mar. 25, 2011), **http://www.bea.gov/national/nipaweb/TableView.asp?SelectedTable=5&FirstYear=2009&LastYear=2010&Freq=Qtr**.